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THE ADVANTAGES OF WASHING COKING COALS.

Connellsville, Pa., is famed for its excellent coking coals, and the coke from them is the principal fuel in the Western smelting-works. Yet the practice of washing this coal previous to coking has not yet become as common as it should be, and as it must be, if this product is to retain its markets. Let us take Salt Lake, for example. Connellsville coke costs there $23 per ton, while English coke can be laid down at $21; and, more than this, English coke is claimed to give 10 per cent better results, principally because it is freer from ash, the coal having been washed before coking. The English coke is also harder, standing transportation better and with less loss. This hardness is in part attributed to the washing, and in part to the use of narrow Belgian ovens, instead of the beehive ovens universally adopted in Pennsylvania. Whether the Belgian oven would be better suited to Pennsylvania coal than that now used, may be open to question, but not so the necessity for washing all our coals before coking; and the Western smelters having found a large practical economy in using English coke, it behooves our Pennsylvania mine-owners to adopt such improvements as will prevent this important diversion of their trade.

THE GENESIS OF CINNABAR DEPOSITS.

This is the title of a paper read last December, by S. B. CHRISTY, Ph B., before the Geological Section of the California Academy of Sciences, and published in *Silliman's Journal* for June. It discusses the question, "Are cinnabar deposits produced by sublimation, or are they deposited from solution?" Mr. CHRISTY argues first, from the geological features and mineral paragenesis of most cinnabar deposits, that the sublimation hypothesis is improbable. The deposits, with few exceptions, are not in immediate relation to igneous rocks, but are nearly always in "metamorphic" rocks. They are not, he says, usually in true fissure-veins, but rather in impregnations. And finally, they are associated in many cases with carbonates, such as calcite, dolomite, and spherosiderite, which, Mr. CHRISTY says, "certainly argues against the sublimation hypothesis." We are not quite certain of the conclusiveness of this argument; and we wish it had been more fully stated, since so much depends upon it. If Mr. CHRISTY means that the deposition of sublimations would involve a degree of heat that carbonates would not endure without decomposition, we are not ready to give an unqualified assent. The rocks in which sublimates are condensed and precipitated must be at least cooler than the point of volatilization of the substance deposited. We confess, however, that we do not render full justice to his argument in this brief comment. But we must pass to consider its positive side; that is, the demonstration that the ores of mercury could have been deposited from solutions.

Mercury exists very rarely, if ever, in natural mineral waters. Mr. CHRISTY cites a single instance, in which the amount of mercury was so small that 500 liters of water were required to furnish enough for exhibition in the metallic state. Mercuric chloride, therefore, can scarcely be the form in which this metal entered into solution, if at all; since in tha case we might expect some traces of it in mineral springs. But the sulphide, though insoluble in almost every thing else, is soluble in solutions of alkaline sulphides containing free alkali, and is precipitated completely when the free alkali is neutralized by carbonic acid or sulphureted hydrogen. On the other hand, free alkali is not known as a constituent of natural waters; and the question remains, How are we to suppose that mercuric sulphide may have been held in solution?

To answer this question, Mr. CHRISTY made a series of experiments, testing the effect of increased temperature and pressure, and proving that under these conditions, alkaline waters (such as the New Almaden Vichy water, which contains bicarbonate of soda and lime, sulphate of lime and magnesia, chloride of sodium and free carbonic acid) are capable, when sulphureted hydrogen is added to them, of dissolving the black mercuric sulphide and depositing it again, upon slow cooling, in the form of crystalline cinnabar.

Returning now to the discussion of the rival theories, Mr. CHRISTY claims that the heat for the sublimation of cinnabar (500°C.) could not come from any known source except volcanic rocks; that these are not usually in proximity to cinnabar deposits; that the formation of many such deposits, and particularly their associated minerals, can not be attributed to sublimation; and that all these minerals, with the possible exception of iron pyrites, have actually been produced by various experimenters in the wet way.

The total argument is a strong one, well put, and constitutes a very important contribution to the science of ore-deposits. We are glad to see that it comes from the University of California, an institution which ought to make itself felt in just this direction; since it is situated at the commercial center of a region full of new and interesting geological phenomena, inseparably connected with important industries. *

DISCIPLINE OR DEATH.

The revelations of the inquest upon the victims of the recent terrible explosion at the Blantyre colliery show, beyond doubt, that this catastrophe, like the vast majority of its kind, was due to the criminal carelessness and disobedience of the miners themselves. A summary report of the matter says:

"In the hand of one of the miners killed by the explosion was found a tobacco-pipe. Pipes were also found beside two more of the dead. The lamp of another miner who was killed was unlocked, and secreted in his clothes was a forged key for unlocking the Davy lamp. A tobacco-box in the pocket of the fireman contained three lamp-keys. In one of the men's jackets was found a pipe, six lucifer-matches, and two brattice nails, tied ingeniously together so as to form a key for unlocking a safety-lamp, together with a key for the same purpose made out of an ordinary door-key. Other forged keys, pipes, and lucifer-matches were found, showing that the rules laid down for the safety of the miners were systematically evaded."

These facts, which every British colliery-owner knows to be any thing but exceptional, suggest many comments, of which we shall barely mention a few, without extended argument:

1. The state of affairs shown in this case proves criminal laxity in enforcing discipline, as well as recklessness in evading it.

2. It is reasonably certain that these men had been accustomed to smoke their pipes in the mine, and to light them with matches or by unlocking the Davy lamps for the purpose; that they had done this often without causing any explosion; and that, in the absence of actual disastrous results, these infractions of discipline were either not detected or were not punished.

3. The man who lights a pipe or opens a Davy in a mine where the safety-lamp is required, should be as rigorously punished when nothing happens in consequence of his transgression as if he had thereby caused a great calamity.

4. The difficulty of detecting and punishing such culprits is largely due to the way in which the men abet one another in these reckless acts, and are shielded also by the underground bosses and foremen.

5. This strange indifference to a common danger on the part of those who are almost certain to be its victims arises to a great degree from ignorance or perilous half-knowledge. It is believed among coal-miners that fire-damp can not be ignited by a pipe; that when the behavior of the Davy flame does not indicate the presence of fire-damp, it is not really dangerous to open the lamp, etc., etc. In short, experienced but not educated miners are apt to think the rules too stringent, and hence to break them at discretion.

6. This evil can be remedied in part by more thoroughly instructing the miners as to the dangers by which they are surrounded. But the chief point on which they need instruction is the vital importance of

disciplined obedience. Some years ago, we discussed a very significant English case, in which a miner was arrested and prosecuted for simply opening his lamp, without any injurious results. His comrades petitioned in his favor, on the ground that no harm had been done, and that he had a family which would be left helpless if he should be imprisoned according to the law. But the colliery proprietor called them together, and, after fully stating the bearings of the case, left it to their decision. They decided by vote (unanimously, we believe) that the prosecution should go on; and when the accused was subsequently sentenced to imprisonment, they supported his family by subscription until he was restored to work. Such an instance is worth a thousand stringent rules, not understood and not respected by the firemen and miners.

7. The imperfect light furnished by the Davy lamp is one of the causes that lead the miners to open it, when, in their individual judgment, no harm will ensue. The use of some of the other safety-lamps, equally secure and more luminous, is therefore advisable. And the introduction of the electric light would in many cases be still better. It would be easy to surround this light with effective safeguards.

8. The mere use of locks and keys to prevent the Davy or other safety-lamps from being opened in the mine, is an antiquated and childish device. There are many means by which such tampering with lamps can be rendered, if not impracticable (as when the opening of the lamp is made to extinguish it instantly), yet at least certain of detection afterward.

9. Wherever it can be done, it is far better to ventilate a colliery so thoroughly—we might say excessively—that naked lights can be used in it, than to rely upon the defective protection and the delusive sense of security derived from the safety-lamp. In some of our most fiery Pennsylvania collieries, this is the plan pursued.

10. The coal mines of this country are not so dangerous in this respect as those of Great Britain; but we can not flatter ourselves that this will be the case when we reach greater depths. It behooves us to consider well in advance the costly and sad experience of our brothers over the water. Statistics show, here as there, that the carelessness of the miner and his disregard of rules is the chief cause of all kinds of casualties. Here, as there, it may fairly be said that the alternative is presented: *Discipline or Death!* *

THE RIGHTS OF STOCKHOLDERS AND THE WRONGS OF DIRECTORS.

A very important case was recently (June 21st) decided in the Supreme Court of Utah, by Associate Justice Boreman. As many of the points made have a wider application than is covered by the case adjudicated, and may serve as a precedent in other cases of abuses of this kind, we give the following extracts from Judge Boreman's decision.

The case in question was that of Erwin Davis, plaintiff and respondent, *vs.* the Flagstaff Silver Mining Company (Limited), *et al.*, defendants and appellants:

"The appellant, the Flagstaff Company, was incorporated in England, to acquire, hold, and operate mining and smelting properties in Utan. The respondent sued the company, alleging the purchase of ores from it, and the non-delivery thereof; also, that he had advanced money to said company, and that a contract was entered into by and between the company and himself, whereby to acquire a lien upon the properties of the said company, in Utah; and he asked the enforcement of said contract, and that a receiver be appointed. The other defendants were made parties because they were supposed to hold liens against the property of the said company.

"The court below entered a judgment, appointing a receiver, and requiring defendants to surrender possession of the property to the receiver, and enjoining them from interfering with the receiver in his holding, working, and disposing of the property; said judgment also fixes the priorities of the alleged lien-holders, and requires the receiver to pay off the liens, and to pay to respondent two sums, together amounting to nearly $290,000, and interest.

"The defendants, the Flagstaff Company and F. W. Billing, appealed from the judgment of the court below, and from the order of the court overruling the motion of said company and said Billing for a new trial. It appears that the respondents, by arrangement with the directors of the said company, had loaned the company very large sums of money, which was, to a great extent, if not entirely, used in paying dividends. Subsequently, the character of these loans was sought to be changed, and thus was created what are now offered as 'ore contracts.' And, thereafter, the alleged contract of December 13th, 1873, was entered into by said company, through its directors, and by said respondent in person. This alleged contract of December 13th, 1873, called exhibit 'A,' was based upon the ore contracts and directed their payment.

"It seems clear that there was no affirmative action of the stockholders ratifying or approving either the loans, the ore contracts, or the contract of December 13th, 1873. Whatever there was in their conduct supposed to bear such a construction was of a negative character. But, in such matters, a corporation must be judged by its acts, and not by its failures to act. It can not be said to approve that which it simply failed to disapprove by express words. * * *

"A corporation has no powers but such as are granted either in express terms or by direct and necessary implication. This company had no power granted to it to make loans of money, except under special limitations as designated in Section 20 of the 'Articles of Association' of said company. * * * The loans were far in excess of the amounts authorized. The use of the money to pay dividends was in violation of the acts of parliament, called the companies' acts. By these acts, this corporation is prohibited from declaring any dividends, 'except out of the *profits* arising from the business of the company.' Dividends paid out of borrowed money were not paid out of 'profits.' * * *

"It could not be said that respondent was an innocent party and should not be held responsible for any exercise by the company of powers not granted or of powers prohibited. Actual knowledge of the want of authority in the company is not necessary to be shown. In dealing with the company as respondent did—in being a party to an executing contract—he must see to it that the company has the powers it claims to have. In the instance before us, we have no doubt that the respondent was fully aware of the corporate powers of the company. He was one of the incorporators of the company, and one of its first directors. He owned and bought and sold large amounts of its stocks. He was a stockbroker and manipulator of stocks. He went to London with letters that gave him 'a good position' (to use his own language), and he says that, 'in London, the way of operating is very different from here—decidedly old fogish. They did not understand bulls and bears on the stock exchange. A man would go a bear a thousand or two pounds there, and make as much disturbance about that as a man in America would a million.' It was right in the line of his business to know the general powers of these stock corporations. The large dividends from the borrowed money increased the market value of the stocks; the public supposing that the company was doing a legitimate business, and paying dividends out of 'profits,' and such people 'did not understand bulls and bears on the stock exchange.' A shrewd manipulator of stocks could afford to run the risk of losing money loaned to a company to be used to pay dividends, when he knew that he could receive it all back, and much more too, by the sudden rise in the price of stocks.

"The evidence shows that the directors at that time were acting in entire harmony with the respondent, and willing always to comply with his wishes. The respondent did not propose to close the money advanced, and hence the claims were put into the shape of 'ore contract.' A change of shape did not change the substance, however. Being based upon fraudulent and void loans, they were necessarily also fraudulent and void."

COMPANIES HAVE NO POWER TO DECLARE DIVIDENDS FROM "ANTICIPATED PROFITS."

"But, let us assume that no loans ever were made, and the ore contracts were original, and based upon prior transactions between the parties. The receipt of forward payment for ores to be delivered in future, as specified in these contracts, was beyond the powers of the corporation. The company has no grant of authority to thus bulk its expected productions, and involve the company to its ruin by subsequent inability to comply with the terms of the contract. Money arising from such forward payments for ores could not legally be used to pay dividends. Such money was not 'profit arising from the business of the company.' The money might be termed anticipated profits but we nowhere find any authority for the company declaring dividends out of any profits; except such as are realized out of the business—'arising out of the business, of the company. And it is against public policy to allow corporations to thus deal so as to deceive and defraud the people. An unscrupulous directory or company might have no ores, and yet sell ores for ten, twenty, or more years ahead of the production thereof, and use the money thus acquired in declaring one or two dividends of enormous size. Those knowing the inside workings of the company could sell off all their stocks at enormous profits, and leave the company bankrupted, and in the hands of those who were deceived and defrauded into buying the stocks. Courts can not look with any favor upon claims for such powers in corporations.* * *

"We, for the reasons stated, do not think that respondent has a claim upon the company for the enforcement of this contract, Exhibit 'A,' sued upon, nor is he entitled to damages for its breach or non-fulfillment.

"The main feature of the judgment in this case is that of appointing a receiver. Every thing else in it is made subservient to this one matter—is secondary to it. * * *

"The judgment in this case is for the appointment of a receiver, and for nothing else except that which is incidental thereto. He is appointed, and directed to carry into execution a certain contract. As that can not be done according to the terms of the contract, he is directed to pay money instead of ores. The defendants are enjoined from interfering with the receiver, and required to deliver certain property to him. The judgment, being solely for the appointment of a receiver and for matters incidental thereto, and not being made in compliance with either provisions of the statute, was improper. * * *

"The judgment and order of the court below is reversed with costs, and the cause is dismissed.

"Schaeffer, C. J., dissents."

The judgment of Judge Schaeffer, of "the Court below," which is thus reversed by the Supreme Court of the Territory, was, with the judgment of the same judge in the Emma case, the cause of an almost unanimous petition from the members of the Utah bar to the President to have Judge Schaeffer removed; the answer to which has come, though tardily, in the recent appointment of Judge Hunter in the place of the too *complaisant* gentleman whose judgment, it seems, sided with those who had the least scruples in their use of money.

THE EUREKA-RICHMOND CASE.

The London *Mining World* notices at some length Dr. Raymond's paper on this case before the American Institute of Mining Engineers. Its comments on the substance of the paper are courteous and intelligent. Only on two points does it seem to us to fall into a mistake and an injustice. The following passages convey its criticism on these points:

"The position of the Richmond-Eureka case at the present moment is as though a litigant in this country had lost his suit in the Lower Courts and was now awaiting the result of his appeal to the House of Lords. In the Lower Courts, the Richmond Company has been defeated, but the Supreme Court at Washington has still to pronounce the final decision. Now, whether Professor Raymond has done well to publish, so far back as October, 1877, an elaborate paper on a question that is still *sub judice*, is a point upon which a very strong opinion would be held in this country by the public, and upon which very strong action would be taken by the courts. * * *

"The case was tried originally in San Francisco, in July, 1877, and lasted into August; so that, as Professor Raymond's paper was read in the October following, he must be judged not to have lost much time in its preparation. * * *

"But he feels the delicate position in which he has placed himself by thus rushing into a paper controversy before the appeal has been heard; for he urges three reasons to justify him in doing so: 'First, there will be a delay of months, perhaps years, in reaching this case on the Supreme Court calendar; secondly, it was necessary, if this paper were to be written at all, that it should be written while the subject-matter was fresh in mind; thirdly, the great interest taken in the late decision by the mining community and the legal fraternity calls for such a full explanation of its bearings as I have tried to furnish; and finally, the defeated party in this lawsuit, and some other parties, including mining journals in England, have indulged in unworthy insinuations as to "American justice," and ascribed the result in this instance to the circumstance that one of the contending parties was a British corporation.' Neither the first nor the second plea would be held in this country to justify any one—and particularly a witness in the case—from publishing his views upon a trial that is still *sub judice*; but yet we suppose they manage these things differently in the United States. The English law is powerful enough to punish any person most severely in this country who publishes a statement about a trial as yet undecided. As to the learned professor's third plea, we must plead guilty to having gone so far in former times as to say that we have in vain endeavored to recall a single instance in which an English mining company was successful against an American individual or cor

poration, either in the character of plaintiff or defendant. Usually the best available legal advice has been retained by the English litigants, but always, so far as we can trace, with the same result. We have no remarks to offer as to American justice, which may be, for aught we know, as pure as that which we flatter ourselves is meted out by the English courts; but it is a curious fact, to say the least, and we invite Professor RAYMOND to give it his candid consideration, that whenever English companies have ventured (acting under the best legal advice that could be had) to try issue with American individuals or corporations in the American courts, the result has been always adverse to them. For this reason, immense sums have over and over again been paid by English companies rather than run the risk of a lawsuit; and again we say, the fact is curious, and deserves the learned professor's consideration."

We reply very briefly:

1. Dr. RAYMOND'S paper was "presented" at the Amenia meeting in 1877; but it was not written out and published till long afterward. But this is perhaps a small matter. The appeal is still pending, and the impropriety of comment upon the case, in the opinion of the *Mining World*, would be as great now as ever.

2. We can hardly believe our contemporary serious in its assertion that the mere statement of a case, giving both sides and showing the bearing of the decision, would be considered wrong in England, after all the issues of fact had been decided, merely because notice of appeal had been given on pure questions of law. The Eureka decision is a settled precedent all over this country. Many cases have already been decided on the strength of it. All the law-books since published quote and explain it. The English journals freely abused it, and charged corruption on the judges that pronounced the decision. Why should a mining engineer be condemned for mentioning it to his professional colleagues, because, forsooth, the Richmond lawyers have given notice of an appeal which may never be argued? The United States Supreme Court itself, some time ago, refused to grant an injunction to prevent the Eureka Company from working the disputed ground, giving as a reason that the case had been decided in favor of that company, and notice of appeal did not keep the matter open so as to justify the granting of an injunction pending further hearings. What English court punished any body for commenting on the Tichborne case, at any stage of it?

3. We will discuss the question of the litigations of English companies hereafter. Meanwhile, as the *Mining World* wants a case, we mention the Emma-Illinois case in Utah. *

NEW PUBLICATIONS.

OBSERVATIONS ON BALLESWIDDEN MINE. *By* CAPT. T. P. ROWE *and* DR. C. LE NEVE FOSTER. *Reprinted from the Transactions of the Royal Geological Society of Cornwall*, 1878. Pamphlet, 8vo, 8 pp.

We are indebted to Dr. FOSTER for a copy of this interesting paper, and also a copy of the Reports of the Mine Inspectors of Great Britain, of which we gave an abstract a week or two ago. This account of Balleswidden tin mine, in the village of St. Just-in-Penwith, Cornwall, is another contribution to the series of careful and intelligent studies of vein-phenomena, by which Dr. FOSTER is doing so much to demonstrate the true nature of the Cornwall ore-deposits, and to overthrow some time-honored theories with regard to them. If we are not mistaken, one result of these and similar inquiries may be to force the remodeling of the theory and classification of the Saxon school, as applied, in the works of COTTA particularly, to the genesis of tin ore-deposits. The Balleswidden mine was closed in 1873, and will probably never be reopened. It had been worked 36 years, and had produced over 12,000 tons of block tin, sold for £694,094. Dr. FOSTER wisely makes a record of the facts concerning the structure of the deposit, before they are forgotten. We find space for a brief, general statement only. The chief productive lodes in the mine, apart from its cross-courses and faulting fissures, were really zones of altered granite, traversed by small "leaders" of tin ore. "Awbry's lode," for instance, is described as follows:

"The so-called lode consists of four or five small parallel tin-veins, bounded on each side by a hard rock, locally known as *hard-work*, which merges into granite. The total width of the lode varied from 10 to 20 feet, and averaged about 12 feet. Each little vein or leader, known at Balleswidden as a *gry*, was generally about a half-inch thick, and rarely widened out to more than four inches. The *gries* rarely united with one another along the dip or the strike, but often dwindled away to a mere string or joint. The filling up of these little veins consisted of coarsely crystallized tinstone, with schorl, quartz, gilbertite, and kaolin; a little wolfram, fluor spar, bismuthine, and native copper were occasionally met with. * * * * The little veins or *gries* evidently occupy spaces left by cracks or fissures, which were, no doubt, originally formed in clean granite. The open cracks were then probably filled up from below by solutions which caused the deposition of the tinstone and other minerals; and we are of opinion that the same influences which brought about the filling up of the small veins changed the granite on each side into the *hard-work* which we now find. * * * * We must here remark that the word *lode*, as used by the Balleswidden miners, did not denote the mere contents of a fissure, but was applied to the whole band of granite containing the little tin veins and their crusts of *hard-work*."

We commend the last sentence to the attention of Prof. W. P. BLAKE, who so earnestly protested, in his paper on the Eureka formations (Trans. Am. Inst. Min. Eng., Vol. VI., p. 561, etc.), and in the subsequent discussion, against this use of the term *lode*. Prof. BLAKE even appealed, with admirable boldness, to "Cornish miners," as authorities by whom the proper "practical" (not "scientific") meaning of the term is "well understood." When referred to a paper by Mr. HENWOOD, a Cornish mining engineer, who used the word in the exact sense which Prof. BLAKE chooses to call new and pernicious, the Professor "regretted" Mr. HENWOOD'S "perversion of words," and declared it to be "in direct violation of miners' usage."

In a paper on the Great Flat Lode in Cornwall (cited in Trans. Am. Inst. of Min. Eng., Vol. VI., p. 381), Dr. FOSTER, the best present authority on Cornish mines, distinctly declares that the miners' usage of that district extends the term *lodes* to mere bands of stanniferous altered granite. In a letter (cited on p. 396 of the same volume) Dr. FOSTER says, "I am coming round to the opinion that most Cornish tin mines in granite are merely bands of altered rock." Adding to these proofs the sentence we have quoted from the pamphlet before us, and reserving some scores of other instances, with which to torment Prof. BLAKE whenever we feel like it, we advise him to reconsider his hasty dogmatics, and relieve the memory of worthy Mr. HENWOOD, and many before and after him, of the imputation of "perversion of words." Nay, let him ponder deeply whether he has not himself been committing that same offense. It is, indeed, an unknown and awkward thing to pervert words—and then have to eat them. *

PERSONALS.

The growing importance of New York as a center for the manipulation of mining affairs is drawing hither many enterprising gentlemen. This week, among other callers at our office, we acknowledge a visit yesterday from Mr. FRASER, of the firm of FRASER & CHALMERS. Mr. F. is East in the interest of the house, and states that its business is very prosperous.

THE DEPHOSPHORIZATION OF IRON IN THE BESSEMER CONVERTER AND OTHER APPARATUS.*

Translated from the French of M. Pourcel, for the Engineering and Mining Journal, by Henry Holliday.

At the meeting of the Iron and Steel Institute, held at Paris in September, 1878, Messrs. Thomas and Gilchrist, English chemists, contributed, on the question of the elimination of phosphorus in the Bessemer converter, a paper which, owing to want of time, was not read, and which, so to speak, passed by unnoticed. Several English and American technical journals, however, gave extracts from the paper; but that which made it known in France, and attracted the attention of metallurgists, was the analysis of it given by M. Gruner to the Société d'Encouragement, at its meeting on the 28th of November last.

After this description of the new process of dephosphorization, which has recently been published, somewhat amplified, in the last number of the *Annales des Mines*, I wrote to my respected guide saying that, "like him, I believed the chemical problem of dephosphorization in the converter was solved, but that practical success did not seem to me yet attained. Dephosphorization could not take place till after decarbonization; it was, therefore, necessary to continue blowing after the dropping of the flame; and, consequently, to dissolve in the metallic bath a somewhat large quantity of peroxide of iron, the reduction of which, by the addition of spiegel, more or less rich, had the great inconvenience of causing discharges from the converter. My opinion was, in fact, that dephosphorization only commenced when carbonic oxide gas was not being intermolecularly generated in more than a very small quantity within the molten mass, and that, if M. Tessié du Motay (whose experiments M. Gruner had cited) had not been able to dephosphorize in a basic magnesian medium, and with a basic slag, it was because the apparatus he used did not allow of keeping fluid metal containing less than 1½ to 2 per cent of carbon. Thenceforward, the carbonic oxide gas, reducing-element, ruled the intermolecular chemical reaction; consequently, the phosphorus, which is only eliminated under a powerful oxidizing influence, could not in this case become oxidized, or pass into the state of phosphate of iron, and become incorporated with the slag. Besides, it was well known that, in the blast-furnace, with an extra basic slag, there was never any elimination of phosphorus, because the operation was conducted in a reducing medium."

Thus I wrote on the 13th of December last. I referred to the theoretic fact which I had pointed out to *L'Industrie Minérale* in May, 1877, in giving an account of the trials of Mr. Lowthian Bell, namely, *that, to the influence of the chemical composition of the slag, it was necessary to add that of the reducing action of the oxide of carbon, in every operation where it was wished simultaneously to effect dephosphorization and complete purification; that is, to have, in a liquid state, a mild dephosphorized metal.*

Silica, free, or not altogether neutralized by the multiplicity of bases, decomposes phosphate of iron, and liberates phosphoric acid, which is decomposed by the iron to form a phosphide of iron, even in the absence of carbon or oxide of carbon; but, when the silica is neutralized, or even altogether absent, phosphate of iron at a moderate temperature, and *a fortiori* at the temperature of the metallurgical operations in which mild liquid metal is produced, is not decomposed, but reduced to the state of phosphide, and incorporated with the metal. If, then, the phosphorus exists first of all in the state of phosphide of iron, it will remain fixed and concentrated in the refined molten metal.

But, then, it will be asked, how is it that we can practically remove 70 or 80 per cent of the phosphorus of pig-iron without appreciably diminishing its proportion of carbon? That is quite another affair, to which I will reply hereafter.

To return to the Thomas and Gilchrist process. As I have said, this process, passed by in the month of September last, reappeared, perfected by new experiments, with considerable exultation at the meeting of the Iron and Steel Institute, held in London on the 7th, 8th, and 9th of May last. I have just sketched in a few words the theoretical principle. To resume, in order to obtain liquid malleable metal from phosphoric pig, it is necessary to refine in a neutral medium—a medium which, as regards oxide of

* A Paper read before the Société de l'Industrie Minérale, at Paris, June 7th, 1879, by M. Pourcel, Chief-Engineer of the Terrenoire Steel-Works.

iron, is neither basic nor acid ; to promote a very powerful oxidizing action ; and to be able to prolong it until it nullifies the reducing action of the oxide of carbon intermolecularly produced by the reciprocal action of the carbide upon the oxide of iron. The Siemens-Martin furnace does not fulfill the conditions named, nor does the Pernot furnace ; the Ponsard *forno-convertisseur*, and especially the Bessemer vessel, are the only kinds of apparatus which do.

The experiments of Messrs. Thomas and Gilchrist were made in Bessemer converters, both fixed and movable. I shall not repeat the history given to the Iron and Steel Institute, but content myself with making the practical result appreciated by a detailed description of one of the operations which I followed at the works of Bolckow, Vaughan & Co., at Eston, superintended by Mr. Richards. The vessel used had a basic lining of prepared baked bricks, manufactured from a rich magnesian dolomite, agglomerated with silicate of soda. These bricks were composed of :

	Per cent.
Silica	9·50
Lime	50·25
Magnesia	21·50
Alumina	10·00
Peroxide of iron	4·46
Soda, about	4·00
	99·71

The vessel had a fixed bottom pierced with holes instead of movable tuyeres, which they have not yet been able to make with the calcareous dolomite that serves for the lining. The usual charge of the vessel was eight tons of hematite iron ; but, for the treatment of Cleveland pigs, the weight charged did not exceed 5½ or 6 tons, at most. The following is the *procès-verbal* of operation No. 2, made May 13th, between noon and one o'clock :

The weight of pig put in the vessel is about 6 tons ; it is gray Cleveland iron, remelted in the cupola, and contains the following :

Silicon	3·030
Carbon	3·200
Phosphorus	1·800
Sulphur	0·030
Manganese	0·450

the iron is added 20 per cent, say about 1½ tons, of a spongy mixture of lime and oxide of iron, agglomerated previously in pieces a little bigger than walnuts, and heated. This reacting mixture contains :

Silica	1.000
Lime	60·000
Peroxide of iron	31·890
Carbonic acid	6·400
	99·290

When the vessel is turned up, a short flame is perceived, accompanied by faint sparks, giving through the spectroscope all the rays of the complete Bessemer spectrum. This flame is due to the decomposition of the small quantity of carbonic acid still contained in the insufficiently calcined reagent. After a minute and a half, the sparks leave the converter compact : all the rays of the spectrum disappear ; the pressure of blast is 120 cu. m. of mercury (about 24 lbs.) After seven minutes, the yellow ray of the sodium appears, and the spectrum is complete thirty seconds after. The duration of the first period is thus seven and a half minutes.

The second period lasts exactly seven and a half minutes, without excessive agitation or violent discharge. It is to avoid these that the weight is reduced of pigs which the converter will treat of ordinary hematite. The spectrum being reduced to the yellow ray after seven and a half minutes of the second period, they blow again for a minute and a half, and afterward turn down the vessel to take samples, which they at once hammer, temper, and break, in order to judge, according to the fragility and the appearance of the grain, of the quantity of phosphorus still contained in the metal. The first sample is brittle with an open crystalline grain. It contains phosphorus 0·730 per cent. They turn up the converter and blow for about thirty seconds. Sample No. 2, taken thereafter, is brittle and crystalline ; it contains phosphorus 0·458 per cent. Again they blow for fifteen seconds, turn down, and take a third sample—still brittle and with a crystalline fracture ; the metal, sample No. 3, contains phosphorus 0·334 per cent. After blowing fifteen seconds more, the sample still denotes a too phosphoric metal. In fact, it contains, sample No. 4, phosphorus 0·210 per cent. At last, further blowing for ten seconds finishes the operation. Sample No. 5 shows a mild metal with a close grain, which is considered sufficiently dephosphorized. The analysis gave phosphorus 0·14 per cent. The successive stoppages for the taking of samples occupied about 18 minutes.

Ten per cent of spiegel re-melted in the cupola, giving, on analysis, manganese 17 per cent, phosphorus 0·163 per cent, is added. Hardly have they teemed one quarter of the contents of the spiegel ladle, than, issuing from the throat of the converter, is seen a long train of flame accompanied by a large discharge of slag. They stop for a time the addition of the manganiferous pig, and have to interrupt the teeming twice or thrice before emptying the ladle. The bulk of the slag is expelled from the converter. The metal teemed from the vessel into the steel ladle continues bubbling for two or three minutes ; it also heaves in the ingot molds. It appeared milder and less hot than that of the preceding operation, which, on the whole, ran well. The following was its composition :

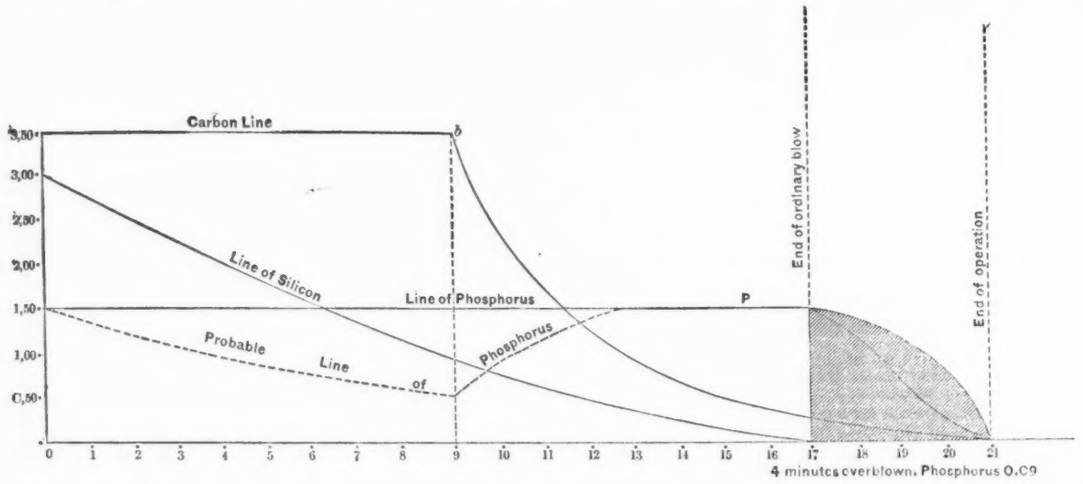
Carbon	0·171
Manganese	0·160
Phosphorus	0·223
Sulphur	0·037
Silicon	trace.

To resume, the two main points which I called attention to, in commencing, stand out clearly in studying the different phases of the operation just described.

1. The neutralization of the silica arising from the oxidation of the silicon of the pig-iron by a mixture of lime and oxide of iron,* which appears to answer the desired end.

2. The *overblowing*, or prolonged oxidizing action which determines the pscorification of the phosphide of iron.

The neutralization of the silica causes the production of a large quantity of slag, which occupies in the converter a considerable space, and diminishes its useful effect, in the proportion of ¼ to ⅓. The overblowing increases the proportion of peroxide of iron dissolved in the bath of metal, and necessitates, therefore, a considerably-increased quantity of manganese, which ought to be as much as 2 or 3 per cent, progressively added, in order to run as little risk as possible of a red-short product. It will be seen, in fact, that in this operation the overblowing has not been sufficiently prolonged, because the metal of sample No. 5 contains 0·14 per cent of phosphorus ; and yet it is questionable whether the 1·7 per cent of manganese added was enough; for there remains, so to speak, no more than a trace of it in the metal run into ingots.



I will sum up the resulting difficulties :

1. Successive stoppages for the taking of samples to the end of the blow.

2. Uncertainty of sufficient dephosphorization.

3. The discharges brought about by the addition of the spiegel.

These are difficulties, inherent to the operation, which will be more or less appreciated according to particular circumstances, but which may disappear some day.

One fact to be observed is, that the metal is more phosphoric after than before the addition of the spiegel, and yet the phosphorus which that iron introduces does not explain an increase of percentage in the proportions named.† It must, therefore, be admitted that a portion of the phosphate of iron of the slag is reduced under the action of the enormous quantity of carbonic oxide which frees itself from the bath, and traverses the layer of slag at the moment of the addition of the manganiferous pig. This, then, is another proof that you must reduce to a minimum the release of the carbonic oxide in the bath of molten metal, to make the oxidizing action dominant, in order that the phosphorus may pass away and remain in the slag ; and if the phosphorus were therein incorporated *in the state of phosphate of lime*, it is evident that this phenomenon of instantaneous reduction would not be effected.

The accompanying drawing, which Mr. Richards exhibited at the meeting in London, was made to show at a glance the different phases of the operation—the departure of the three bodies—carbon, silicon, and phosphorus. The upright scale shows the percentages, and the horizontal one the time, minute by minute, during which the blast is admitted to the converter. The silicon goes first. The curve which marks its decrease in the metal cuts the bottom line perhaps before the end of the ordinary operation. As to the carbon, its percentage does not decrease until the silicon is below 1 per cent. The point *p* marks the beginning of the second period —that where the flame appears at the throat of the vessel ; and the curve which indicates its decrease remains certainly asymptote to the

* This oxide of iron is blue billy, or the residue of pyrites, rich in iron, and containing only four or five per cent of silica, and five tenths per cent of sulphur.

† By simple calculation, it will be seen that the addition of 10 per cent of spiegel with 0·165 phosphorus gives a metal with about 0·15 phosphorus

bottom line. In fact, one can not completely burn out the carbon; the flame pales, but continues, and analysis reveals always in over-refined metal the presence of 0·08 to 0·10 per cent of carbon. The line which shows the departure of the phosphorus is represented by a straight line as far as the point *P* corresponding to the presence of about 0·2 per cent of silicon, and 0·5 to 0·6 per cent of carbon. On leaving *P*, the curve of decrease of the phosphorus descends rapidly toward the bottom line, which practically it should perhaps never cut. (See note at end.)

Thus, at the instant of the disappearance of the spectra, which marks the end of an ordinary blow, the phosphorus hardly begins to leave the metal, and its departure, which is effected during the over-blow, ought to correspond with an enriching of the slag in oxide of iron, if the phosphorus incorporates itself therein in the state of phosphate of iron. This is, in effect, proved by the following analyses of slags, taken during the first operation I witnessed at Eston. The percentages of oxide of iron corresponding to 1 min. 45 sec., 2 min. 30 sec., and 2 min. 50 sec. of over-blowing are, respectively :

Protoxide of iron	7·633	10·94	12·77
Peroxide of iron	3·250	4·46	5·677
The metal, after 1 min. 45 sec. of over-blow, contained phosphorus			0·597
" " 2 min. 50 sec.		" "	0·142

In every case, these percentages of iron in the slag are comparatively low, and denote a waste that is not excessive, which I have proved not to exceed 18 per cent. But a comparison *a priori* can not be established from that, although the weight of the silica were known in advance, seeing that a large quantity of oxide of iron is mechanically blown out of the converter during the last minutes of the operation. This is indicated by the reddish smoke which emanates in great abundance from the converter during the over-blow. It would be instructive to analyze this smoke, which certainly ought to carry off the bulk perhaps of the phosphate of iron formed, as happens in the Howson puddling furnace. However that may be, and although my opinion is in direct contradiction to the assertion made at the sitting on the 5th of April of the *Industrie Minérale*, I will repeat what I said at the London meeting, namely, "That the lime, after having performed its function of neutralizing base in the first period of the operation, in order to preserve the lining from all corroding action on the part of the silica, plays only a passive *rôle* in the period of the over-blow. Phosphate of lime is an absolutely infusible body, the formation of which it would seem that no affinity here will provoke, whether the lime be free or combined with silica. The phosphide of iron becomes oxidized, passes to the state of phosphate of iron, and may afterward combine with the silicate of iron and of lime previously formed, to produce a double salt. All that is possible ; but in whatsoever medium you work, and howsoever low in silica the slag may be, even supposing it absent, it is always under the action of a powerful oxidation ; and when the carbon is reduced to a minimum, the phosphide of iron becomes embodied in the slag. Consequently, *the period of over-blowing is and will remain the characteristic* of the method of dephosphorization in the Bessemer converter. As a consequence, it may be foreseen that, with the Pernot-Martin or Siemens-Martin furnaces, in which there is not the powerful refining action of the over-blow, despite the basic covering of the bottom identical with that of the Bessemer converter, we shall *never* be able to accomplish the dephosphorization of mild metal in a practical fashion.

I come now to the objection which has been raised by M. Gruner, and which comes naturally to the mind in the face of the affirmation *that the phosphide of iron does not become embodied in the slag until the carbon is reduced to a minimum.* "How is it that Mr. Lowthian Bell, at Clarence, and Dr. Bender, at the Krupp Works, have dephosphorized iron without diminishing its percentage of carbon?" It will satisfy me to recall what numerous analyses have proved in the operation of refining, namely, *that the phosphorus disappears in direct proportion with the silicon.** Thus, when iron, rich in silicon and phosphorus, is submitted to the purifying action of the refinery, the passage of the phosphide of iron into the slag is going on as long as the silicon burns ; that is to say, while the carbon is not burning or producing intermoleculary carbonic oxide gas. If the silicon is high in comparison with the carbon and phosphorus, and if the medium in which you work does not furnish free silica, but furnishes, on the contrary, an excess of oxide of iron to neutralize the silica from the silicon of the pig-iron, the bulk of the phosphide of iron will become incorporated with the slag. These reactions have been utilized in a kind of Danks furnace by Mr. Bell, and in the Pernot furnace by Dr. Bender. The Danks furnace used by Mr. Bell had a lining of oxide of iron over the lower half of its periphery ; the pig-iron, which was charged fluid with a certain proportion of blue billy, was submitted, during ten minutes, to a rocking motion equal to about a half-revolution of the apparatus, and the mixture of the pig-iron with the blue billy was facilitated in the oscillation by ridge-shaped projections in the interior of the furnace, which divided, so to speak, the vessel into two compartments. The characteristic of the operation was the point which limited its duration. They stopped on the appearance of the blue flakes of flame from the oxide of carbon, which announce that, the silicon being reduced to a minimum, the carbon is commencing to burn by intermolecular reaction. By prolonging the operation, the phosphate of iron in the slag is reduced, and the phosphorus reënters the metal. Mr. Lowthian Bell is able, by his method, to reduce the percentage of phosphorus to 0·2 and 0·3 per cent from Cleveland iron, containing, on the average, phosphorus 1·5 per cent and silicon 2·8 per cent. If he had better considered the relative proportions of silicon and phosphorus, and operated on pig-iron containing more silicon, he would, without doubt, have been able to further reduce the percentage of phosphorus.

Dr. Bender and one of his colleagues, whose name I regret I do not know, have established at Essen a system of purification upon the same principles as those of Mr. Bell's method. They use a Pernot-Martin furnace with iron walls and bottom, covered, it is said, with rich and *manganiferous* oxide of iron : the iron is charged fluid, and the end of the operation is determined by the appearance of the first bubbles of oxide of carbon. The phenomenon is therefore very characteristic. From the time that the silicon is no longer in sufficient quantity to hinder the intermolecular combustion of the carbon, oxidation goes on with the carbon ; there is a liberation of the oxide of carbon and partial reduction of the phosphate of iron formed, because the oxidizing influence is no longer absolutely dominant. But Mr. Krupp, in order to establish a difference between the Essen process and Mr. Bell's, has chosen to say in his patent that the manganese plays a preponderant part in the purifying method of Dr. Bender. The reasons he gives for it, however, do not seem to be sufficiently justified. The process of purification "should be practiced upon manganiferous pigs, and the function of the manganese would be to yield a phosphate of protoxide—a fixed compound, the generation of which facilitates the departure of the phosphorus." As a matter of fact, the phosphate of protoxide of manganese is more fixed than its correspondent of iron ; it only transforms itself in part into phosphide under the action of oxide of carbon at the highest temperatures ; but in order to count upon its fixedness, it is necessary that silica be *entirely absent.* This position is not possible in a commercially practical way, and a lining composed of iron ore, even of the richest kind, always contains enough silica to displace the phosphoric acid from its combination with protoxide of manganese, and finally to reëstablish the reactions of Mr. Bell's system.† However that may be, the favorable part which the silicon plays in the dephosphorization of pig-iron does not seem, up to the present, to have received sufficient light, if even it has been appreciated by the metallurgists who are occupied in this interesting question.

The moral of this paper is easy to perceive: *The dephosphorization of iron in the converter is an accomplished scientific fact.*

By attentively studying the chemical phenomena which take place in this operation, we shall be able to overcome the practical difficulties of its commercial application.† But these difficulties will not everywhere be of the same nature as they are to-day in the Bessemer process ; they will be local, as they are in the manufacture of iron, and advantage will dwell with those who have at their disposal the least phosphoric ore.

NOTE.—The curve traced in dotted lines in the drawing, which I have called "probable line of phosphorus," is the expression of a personal opinion which has not been verified, but which rests upon facts observed in the dephosphorization of pigs by the two methods I have described.

* Report of the session of the 5th May, 1877, at the *Industrie Minérale.*

* It is needless to point out that the Krupp patent, taken literally, would have a use more than limited.

† The re-integration within the metal of a portion of the phosphide of iron contained in the slag at the moment the spiegel is added ought to be recognized as an established fact. I have proved it in the metal of the two blows witnessed at Eston. Hence it would appear difficult to produce practically from the pigs of Cleveland, or similar irons a metal containing less than 0·2 per cent of phosphorus.

OPERATIONS AT THE WESTERN ZINC MINES.

The Toms Zinc Furnace, at Pittsburg, Kan., and the zinc ore cleaning and crushing works at Webb City, have shut down. Mr. Toms has for several years been the life of Webb, and his furnace at Pittsburg has been of material benefit in keeping up prices of zinc ores. Mr. Toms says he does not know whether his works will start up again or not. He intimates that it would have been a better plan to have established the reducing works at the zinc ore mines instead of at the coal banks, and there is no doubt but this would have been the greatest economy. The old heresy that it takes three tons of coal to reduce a ton of zinc ore has been preached to some purpose. It has prevented, thus far, the establishment of zinc furnaces on any considerable scale in the Southwest, and given the big reducing works of St. Louis, La Salle, and Peru, Ill., a monopoly of sheet zinc and spelter production. If, as is now asserted, Messrs. Moffett & Sargeant put in operation extensive zinc ore reduction works, and a sheet zinc rolling-mill at the Joplin mines, we have no doubt those big Illinois companies will come to grief. Only a few years ago, vast quantities of our zinc ores were sold and sent to Bethlehem, Pa., for reduction ; and only a few years prior to that time, our spelter and sheet zinc were imported from the Hungarian mines. Step by step, as the Missouri mines were opened, manufactures have rolled westward, and the works have shut up. It seems that, in lead production, we in Missouri have already been left in the rear, and Colorado and Utah are at the front ; but in zinc ores we have yet no competitors. The prices of sheet zinc and spelter have been greatly reduced, and they are now lower even than lead. But the demand springing up for sheet zinc is enormous. It is becoming the cheapest and best roofing material, and when the vast ore-beds that extend down into the heart of Arkansas are developed and worked, when we have in these mines enormous zinc furnaces capable of reducing thousands of tons per week, there will be a great demand for Kansas coal—for railroads to connect directly the coal-banks and ore-beds. The ordinary and common roofing will be sheet-zinc, instead of shingles and split boards. Southwest Missouri and Northwestern Arkansas have enough of this material to supply the whole United States with roofing. Our friends at Joplin, and even at Granby, are pulling away on the outskirts of these great zinc ore-banks. As quick as railroad facilities are supplied, this ore region will furnish consumption for all the Kansas coal that can be delivered. Not one railroad, but two or three, will be required for transportation, and our zinc field will be intersected with railroads, as, now, the iron and oil mines of Pennsylvania are. The men who take the first forecast of this situation will be the men to lead the destinies of this country. It can not be sold out nor monopolized ; it is entirely too big a thing.—*Neosho (Mo.) Miner and Mechanic.*

GOLD DISCOVERY IN NOVA SCOTIA.—A dispatch dated Halifax, July 29th, says that an important gold discovery is reported as having been made at the Montague mines, five miles from Dartmouth. There is considerable excitement among the gold miners.

HEMP-SOFTENING MACHINE.—The Mohawk & Hudson Manufacturing Company, of this place, has recently built and shipped to the hemp region in Kentucky, a hemp-softening machine, which is believed to be the largest and heaviest in the country. It has two fluted rolls. The lower one is 12 inches in diameter and 6 feet long. The upper one is 24 inches by 6 feet. The lower one is driven by gearing from the back shaft, and in turn it drives the upper. The shafts are 6 inches in diameter. The upper roll and shaft weighed about 8500 lbs., and the complete machine about 15,000. Other hemp-softening machines have been built at these works, but none as large and heavy as this.—*Waterford Advertiser.*

ON THE PRESENT AND PROSPECTIVE CONDITIONS OF THE PETROLEUM FIELDS OF PENNSYLVANIA.

Written for the Engineering and Mining Journal by Henry E. Wrigley, Author of Volume J, Second Geological Survey of Pennsylvania.

During the last twenty years of oil development, after vast research, much labor, and great experience, the fact has been thoroughly impressed upon all concerned that the conditions governing the area and the exact location of the producing territory are still undefined, or at least uncertain. In other words, no known law has yet been published by which nature's arrangement of sand-rocks, crevices, or cavities could be interpreted as a sure guide to the driller. The result has been, that all the great oil spots or areas of the region have universally been the result of radiation from the nucleus of some successful "wild-cat" venture.

It is a remarkable fact, by the way, that those men who "wild-cat"—or put down wells in out-of-the-way places on mere chance or on some theory of their own—are far from being appreciated. Where one succeeds, hundreds fail, just like the forlorn hope or advance-guard of an army, "whose business 'tis to die." Should the "wild cat" prove a small well, or should even a few feet of good sand be found, it is enough to give the driller a clue; and, by sinking wells east and west of it, he can readily determine in which direction the sand thickens. Long before this is done, the adjoining land is taken up by capitalists on lease or by purchase, and the work of defining the oil spot proceeds rapidly.

It is not the purpose of this communication, as will appear from its title, to attempt to shed any new light on this branch of the subject, except in a general way; but rather to condense what has been done, and

what probably may be done in the future, for the quick, comprehensive glance of business men.

Geology, as well as the sad and expensive record of the drill, teaches us unmistakably that there *is a limit* in area to the Pennsylvania oil regions. The two questions, then, that interest us are: 1st. How much oil *can* be taken out? 2d. How much oil *has* been taken?

If it were not for the imperfections of our human nature, or, rather, if the drilling had been controlled at first by some wise power, the first question would be very difficult to answer indeed. In the diagram of the life of wells from 1859 to 1875, shown in Vol. J, Second Geological Survey of Pennsylvania, we find the average life of all the wells, during that period, to be two and a half years. The flooded sand-rocks of Oil Creek, Pithole, Tidioute, and elsewhere, are standing witnesses of the fact: and, although many strenuous and costly efforts have been made to revive the territory, they have all been in vain. There is no known instance in the region, of an old pumped-out well being made to produce again—to any extent worthy of note.

Whether this proceeds entirely from the flooding or not, it is impossible to determine; it is sufficient for us to note the fact. We know of special cases of wells pumping small amounts for nine or even twelve years; but they were isolated. After all, it perhaps resolves itself into an arithmetical question of proportion. If one well can exhaust a pool of oil-in-sand in ten years, how long will it take four wells to do it?

A remark must be made here, parenthetically, about the Bradford or northern oil-field, lying north of Titusville, where oil is found under entirely different conditions from the territory below. While sand-rock of a peculiar and well-known character exists there, it is much closer than the old pebble-rock, and is not essential (as it is in the lower country) to the discovery of oil, which is often found in the slate; the crevices caused by the disturbed condition of that section being the real depositories of the oil. That this is true, is evinced by the greatly-increased use of torpedoes in the northern field; hardly any well being finished without one or more. The sand-rock is a mere guide to the top of the slate or cover that has kept the gas from the surface, and condensed it into oil.

These northern wells may, on a general computation, show a somewhat longer average lease of life than those before mentioned; but without such computation, and from the great number drilled, it is questionable if it will vary much.

Therefore, to resume our question: How much oil can be taken out of the Pennsylvania oil region? We must first determine the total possible area; subtract what is exhausted and condemned by the drill, and examine the probabilities of the remainder. In doing this, let us not speculate or indulge in hypothesis, but confine ourselves simply to facts which are matters of record.

In the accompanying map, the line marked "extreme western limit of development," is also a line between gas and oil-wells as found. Beyond this line, the rocks are solid, without disturbance, to a depth so great that it precludes the possibility of obtaining oil as a fluid. This fact is settled both by geology and by the drill. The few small surface-wells at Mecca, Ohio, and elsewhere, are simply distillation from minor coal shales lying nearer the surface than the great Huron shale, which is generally accepted as the mother-rock of Pennsylvania petroleum; and they have no value or bearing on the point.

The extreme eastern line of development simply shows to what extent the drill has been used on that side, and is also a line between gas and oil-wells.

The western line may be considered practically settled and defined beyond all question; and the line shown between light and heavy oil, which is also a matter of record, reduces, as will be seen, still further the possible area for light-oil

Now, in searching for a positive eastern boundary, we turn to the folds or upheaval of our own strata in the Alleghany Mountains, where the crevices from the shales, or oil-bearing rock, if you will, extended to the surface in the synclinals and anticlinals, so that the oil escaped long ago in the form of gas. The last of these folds bearing on our subject, and nearest to the region, is the fifth coal-basin, the axis of which is shown upon the map.*

Between the eastern and the western line of developments, as shown, the black, irregular spots upon the map (which has been reduced accurately from a larger one carefully compiled) indicate the situation and area of all the actual producing territory found therein. The area contained between these two lines amounts to nearly 2450 square miles, or, deducting the heavy oil territory, 1620 miles of light oil.

Within this area to-day have been drilled over 27,000 wells,† of which 23,500 are within the areas defined by the black spots or actual territory; the remainder being scattered dry "wild-cat" wells over the remainder. And one may say, on looking at the map indicating their location, that they are pretty evenly distributed; in other words, the remainder of the light-oil producing area has been at least fairly tested.

Nevertheless, that there does exist in this old territory quite a number of small prolific spots (like Bullion, for instance), yet unfound, is unquestionable. That they will ever produce, if found, one third of the oil that has already been taken out of this light-oil area seems equally improbable.

Now, the total production of the Pennsylvania oil-regions, so far, exclusive of Bradford, which must be treated separately, has been in round numbers (which are amply near enough to convey the idea, and which can readily be corrected by any of the numerous but varying reports), say, 120 millions of barrels.

Within this light-oil territory as defined, there remain to be taken out, basing our opinions on the proportionate value of what has already been done, and from the general average result per square mile, less than 35 millions of barrels. The writer believes that a careful examination of all the facts would not accord two thirds of this.

We come now to the southern line of limit to the region, which is called the "line of temperature." The sand-rocks of the region dip from the northwest to the southeast, and therefore the wells grow deeper as we go south and west. Where the pebble-rock, in which we find the oil, lies at such a depth that the heat of the earth will not permit the gas to condense, we have nothing but gas-wells, as at Leechburg and Saxonburg. This line is taken at a depth of 2500 feet for the sand-rock.

Concerning Bradford, it will be observed that it lies on the extreme northern end of the fifth axis, or its prolongation. The reason for its existence as oil territory seems to be that the wave of upheaval which broke clear to the surface farther south died out in this upper end, and left a cap or cover of slate or other solid rock, which held down the gas until it condensed in the crevices or broken sand-rocks below.

Speaking of the condensation of this gas, few people are aware of the force with which it comes from below. At the Newton gas-well, near Titusville, seven two-inch tubes were attached to the casing; six of them left open, and the seventh registered a pressure of 75 pounds to the square inch. Thus condensation is materially hastened.

Now, in the Bradford or northern oil-field, to determine our original questions of its probable extent and future probabilities, it will depend, first, upon how far north the fifth axis extends; and, second, how far south *on* the axis the cap or cover extends. The general width of the area has already been determined by the drill.

On the north side of the Bradford field, there were developments made long before that field was discovered. The nearest producing territory to-day, is several miles south of Olean, N. Y., as shown. Should the new well at Wellsville, N. Y., be even a small pumper, it would extend the territory twenty-five miles farther north; but the old failures at Olean and vicinity do not allow us, at present, to believe that the northern line will reach much farther.

The southern line of the northern oil-field, as defined upon the map, extends to the extreme limit of the present development at Kinzua, although there is a gap of about four miles of unquestionably good territory, between that spot and Cole Creek, not yet developed, but which certainly will be.

The presence of good wells at Kinzua leads us to believe that the cap or cover extends some distance south of that place, and may reach as far as the head-waters of the Tionesta, ten miles beyond. This of course is a matter of conjecture; but the writer believes it to be the extreme limit. Now, if the northern line advances but slightly and the southern line advances to the Tionesta, it will not quite double the area of the present field.

We come now to the undeveloped territory between the line of the

* Prof. J. P. Lesley has defined a smaller axis at Brady's Bend, Armstrong County, which he calls the sixth axis; but it is too slight to affect the general subject.

† 4500 having been drilled in the northern field.

fifth axis and the eastern line of development. Much of this must be abandoned on account of its proximity to the axis. Its whole contents is about 960 square miles. On this have been drilled perhaps 200 scattering wells, without result.

Nevertheless there exists in this area undoubtedly a fair proportion of pebble-rock; for this will be pebble-rock territory, like the southern field; and if we deduct one fourth as unavailable, for the reason above mentioned, we shall have 720 miles of average territory, which we can compare and average with the results per square mile of the old.

It is a peculiar fact, which is significant as showing the distinction between the northern and the southern oil-field that the total actual producing area of the lower region, shown by the black spots, is only 55 square miles; while that of the new northern region is already 210 square miles; not all of which, however, is prolific. The difference between the two is shown on the map by the spots in the line encircling and defining the northern field.

In closing this general estimate of this matter, the writer simply desires to state his purposes in presenting it.

First, to give a basis upon which every one could estimate its value and correctness for himself; and, secondly, to disabuse the popular mind of the idea that this valuable mineral wealth of the State, or this section of the United States, is inexhaustible. It it serves but to call attention to the subject, the object will have been accomplished.

RECAPITULATION.

2450 square miles of old territory, exclusive of Bradford, have produced, so far, in round numbers, in barrels of light oil	120,000,000
210 square miles of territory at Bradford, or the northern oil-field, have produced in barrels of light oil about	6,000,000

PROSPECTIVE PRODUCTION.

Allowing one third of past production of old territory, we have, in barrels	35,000,000
Allowing Bradford region to double itself, we have	6,000,000
Taking the new, undeveloped territory at 720 square miles, we have, as its proportionate promise of production, compared with the actual output of the old territory of 2450 square miles	35,500,000
Total, barrels	76,500,000

To this must be added the last pumpings of old wells, which cannot well be estimated, but which would not add a serious amount.

UNITED STATES EXPORTS AND IMPORTS FOR THE FISCAL YEAR ENDED JUNE 30, 1879.

From the report of Joseph Nimmo, Jr., Chief of the Bureau of Statistics, we take the following:

The values of the exports of domestic merchandise during the fiscal years ended June 30th, 1878 and 1879, were as follows:

Year ended June 30th, 1878	$680,709,268
" " " 1879	698,334,951
Increase	$17,625,683

The values of the exports of foreign merchandise during the fiscal years ended June 30th, 1878 and 1879, were as follows:

Year ended June 30th, 1878	$14,156,498
" " " 1879	12,093,792
Decrease	$2,062,706

The values of the imports of merchandise during the years ended June 30th, 1878 and 1879, were as follows:

Year ended June 30th, 1878	$437,051,532
" " " 1879	445,792,141
Increase	$8,740,609

The total value of the exports of merchandise from the United States during the fiscal year ended June 30th, 1879, exceeded the value of the imports of merchandise by the sum of $264,636,602, as against an excess of exports over imports of merchandise during the preceding year, amounting to $257,814,234.

Our exports of merchandise last year were larger than any previous year. Ten out of fifteen years past show a balance of trade against us, and five, a balance in our favor. But, nevertheless, the net balance against us in 15 years amounts to but $136,899,540, or about one half the amount gained by us during the last fiscal year. In 1874, the tide turned, and the balance in our favor was $18,876,698. In 1875, there was a change, the balance against us being $19,562,725. Since then, the balance in our favor has been regular and steadily enlarged. In 1876, it was $79,643,481; in 1877, $151,152,094; in 1878, $257,814,234; and in 1879, $264,636,602.

The imports and exports of coin and bullion during the last fiscal year were as follows:

Exports of coin and bullion	$24,996,641
Imports " " "	20,293,000
Excess of exports	$4,703,641

During the preceding fiscal year, the exports of coin and bullion exceeded the imports of coin and bullion by the sum of $3,918,811.

The excess of exports over imports of coin and bullion for 15 years, ended June 30th, was $701,058,021, or an average of $46,737,201 per annum. As our excess of exports over imports during the past two years has been entirely silver, of which we have a great abundance, the showing is a very favorable one.

The exhibit of the imports and exports of both merchandise and specie for the fiscal years 1879 and 1878 is as follows:

Total Merchandise and Specie:	
1879.—Exports.—Domestic	$715,889,186
" Foreign	19,536,198
Total	735,425,384
Imports	466,085,141
Excess of exports over imports	269,340,243
1878.—Exports.—Domestic	707,771,153
" Foreign	20,834,738
Total	728,605,891
Imports	466,872,846
Excess of exports over imports	261,733,045

THE COMSTOCK MINES.

Special Correspondence of the Engineering and Mining Journal.

A few months since, during one of my previous visits to the Comstock mines, stocks took a sudden upward turn in this mountain camp. Sierra Nevada was booming, and about every other man you met was a prospective millionaire. As I look back upon them now, I can not but confess that they were lively times. At present, there is a gloom and depression settling upon the community that the uncovering of a real "bonanza" alone can raise and dispel. Stocks are tumbling, sudden breaks in the market are the order of the day, and the end is not yet.

What are the reasons for this doubt and despondency? They are manifold. Dividends have ceased for the time being, and assessments are levied with unwonted frequency The North End mines—Sierra Nevada, Union, and Mexican—that are claimed to be "in bonanza," are still forced to rely on their stockholders for the funds necessary to "develop" their rich ore-body. New and expensive hoisting and pumping machinery is being constructed in San Francisco, and erected here at the mines, to sink enormous shafts to the deepest levels and to raise the water and the ore to the surface. Prospecting is going vigorously forward, at depths varying from two thousand to twenty-seven hundred feet; and yet the lucky "strikes," that are to make every one happy, have not been made. Unfortunately for the Comstock, just at the critical moment when support and encouragement are most needed, the attention of the speculating community has been called to Bodie, Tuscarora, Cornucopia, etc., where rich developments are proving the value of the properties. Strange to say, people on this coast are beginning to prefer dividends to assessments.

To secure the confidence of the public in the permanency of the Comstock vein, and to call it back to its first love, something desperate must be done soon. The success of some Eastern capitalists in Colorado, Utah, Montana, and Nevada, where mineral properties have been bought at bedrock prices, and worked under a close-corporation management, entirely outside the vail of stock manipulators, has set speculators on this coast to thinking whether this is not, the real key to open the door to earth's treasure-house.

This means a decided change in the basis of future operations. To place your fortune in the hands of those who have every temptation to pander to their selfish interests and are liable to prove recreant to their sacred trusts is one thing; to invest under the judgment of those competent to advise in such matters, retain control of your own property, and develop it in a systematic and economical matter, under true business principles, is decidedly another.

In hopes of checking this tendency of the vast multitude that have so long given their support to the Comstock mines to wander off to pastures green, there is an uncommon activity along the lower levels, from the Utah on the north to Alta and Justice on the south. Shafts are being sunk, drifts sent off, cross-cuts run, winzes upraised, and ore-feeders and stringers followed up with a pertinacity never before exhibited. The new machinery of the Utah lately completed is sufficient, it is claimed, to work out the ore-body that they think is not far off, as soon as it is reached. The Sierra Nevada is milling ore from the top of what they claim is "their bonanza," but not in sufficient quantities to make the property self-sustaining. The Union and Mexican have jointly purchased the old North Consolidated Virginia shaft, now known as the "Union shaft," and have erected the finest hoisting machinery on the lode, machinery that was built in San Francisco to raise over one thousand tons of ore in twenty-four hours through a vertical height of three thousand feet.

As time is a very important item in mine development, the engines are designed for a piston-speed of nearly one thousand feet per minute. They are direct-acting; intermediate-gearing, with attendant friction, being dispensed with. In this manner, the safety-cages are run up and down the hoisting compartments of the vertical shaft at a speed of between two and four thousand feet per minute. This outline description will give you some idea of the height of excellence that has been reached in the construction of this complicated machinery.

At the Union shaft, preparations are rapidly being made for the reception of the huge pumping machinery which is designed to raise the water from a depth of four thousand feet to the level of the Sutro Tunnel (1700 feet from the surface). When the machinery is all in place, this will be one of the finest mining plants in the world. Its rivals on the Comstock will be the Combination Yellow Jacket and the New Overman, termed for distinction the Forman, from its superintendent.

The machinery in each will be slightly different, but all constructed with a view to exploring the deepest levels. The new Yellow Jacket hoisting-engines are being built in San Francisco at an expense of $142,500. Each of the new shafts that I have referred to will cost very nearly, if not quite, $1,000,000 before it reaches ore-bodies that will put them on the list of dividend-paying stocks, if they ever reach that happy result.

The Ophir, it is rumored, will soon be put on a dividend-paying basis. The California and the Consolidated Virginia are still shipping bullion, but not enough to afford their stockholders much substantial encouragement. Alta and Justice keep taking out little stringers of ore, but not enough to enrich their owners. Julia, it is reported, is improving, but the *bonâ-fide* evidence is necessary to insure confidence. Upon my return from Bodie and the south, there may be some new developments worth chronicling.

SI ERRA.

VIRGINIA CITY, NEV., July 23, 1879.

ALASKA MINES.—Recent advices from Sitka report "that fifteen thousand shares of stock of the Alaska Gold and Silver Mining Company were sold at Sitka, mostly to miners employed in the mine. An additional force of miners will be taken up on the next trip of the California. The intention of the company is to enlarge the mill to twenty stamps this fall.

A MINING STOCK EXCHANGE PROPOSED FOR BOSTON.—The Boston *Economist* of July 26th favors the establishment of a Mining Exchange in Boston, to be confined exclusively to dealings in the shares of mining companies, and says that a large number of standard mining companies would undoubtedly support the movement, and that there are probably from twenty to twenty-five million dollars invested by New England people in mining enterprises of different kinds.

PROGRESS IN SCIENCE AND THE ARTS.

General Science.

Telegraphic Notes.—The cable steamer Faraday, having laid the shore-end of the new French Atlantic Cable from the coast of France, has returned to England to take on board the shore-end of the cable to be laid on this side, which she will at once proceed to lay down. The telegraphic journals express considerable doubts of the financial success of this undertaking, contending generally that there are already more transatlantic cables in operation than are required for the needs of business. For information on this point in detail, our readers may consult the late numbers of the *Journal of the Telegraph*.——Concerning the South African Cable project, briefly alluded to in one of our late issues, the news in the telegraphic journals indicates that its completion may be speedily looked for. The Kangaroo, from late advices, had arrived at Durban on May 21st, with the Natal-Zanzibar section. A second section is reported to be on its way in the Seine; and the Calabria is about to set out, or has already sailed, with the third and remaining section. —— The steamship Scotia, late of the Cunard line of Atlantic steamers, and familiar to every old ocean traveler, has been converted from a side-wheeler to a double screw, and otherwise altered to adapt her to the requirements of a cable steamer. She is reported to have just taken on board 588 miles of cable intended to continue the Indo-Australian telegraph, already completed from Penang to Malacca, and thence laid nearly as far as Singapore.——At an entertainment given to the representatives to the International Telegraphic Conference, the statement was made that there are at the present time about 66,000 miles of submarine cable laid down, representing a capital of £25,000,000.——The Cologne *Gazette* is authority for the announcement that the subterranean telegraph between Cologne and Metz is completed and ready for use. The length of this important link of the underground telegraph system that the German government is rapidly completing is 310 kilometers (192½ miles), and it was completed in less than four months.——The new German-Norwegian cable, to which allusion has been made by us, is expected to be laid in August.——The London *Electrician* reports in its last issue an account of "a very satisfactory trial" of the Cowper Writing Telegraph between Woking and Waterloo station telegraph office, a distance of 26½ miles.

Jottings.—It has heretofore been supposed that the stone implements, especially the flint spear and arrow-heads used by the prehistoric inhabitants of Europe and America, were made by chipping off fragments from a piece of suitable size by means of a rude stone hammer. Mr. Cushing, curator of the Anthropological Museum of the Smithsonian Institution, who has made a very interesting experimental study of aboriginal processes of manufacture, found it impossible, by using the rude implements that were within the reach of the ancient manufacturers, to imitate, by chipping with a stone hammer, the finer and more delicate specimens of Indian arrows. He accidentally made the interesting observation, that small fragments could be broken off from a piece of flint, with much greater precision and certainty by pressure with a pointed rod of bone or horn, than by blows with a stone hammer. Mr. Cushing was enabled in this manner to "flake" spear and arrow-heads into the most delicate and fragile shapes with a degree of certainty that renders it almost equivalent to demonstration that this was the mode adapted by the aborigines for working flints before the introduction of iron. A full abstract of Mr. Cushing's paper on this subject, read before the Anthropological Society of the Smithsonian Institution, appears, with an instructive illustration, in the *Scientific American* of July 26th.——The *Manufacturer and Builder* of current issue has the following startling announcement: "A revolution in practical metallurgy is pending. Prepare for startling developments and changes." Our readers will accordingly brace themselves.——The famous Nickel-Plating Patent contest appears to have finally come to an end by the unconditional surrender of the manufacturers to the United Nickel Company, owners of the Adams patent: several judicial decisions in favor of the validity of said patent having lately greatly strengthened the company. The combination of manufacturers which opposed the patent—comprising some 40 of the largest firms in the business in the country—have abandoned the fight, taken out licenses in a body, and paid back-damages. The intelligence and justice of the favorable decisions above referred to have been gravely questioned by the more prominent technical journals of the country. It may be good law, but—we never use a big, big D.——From *Engineering News* we learn that M. Roudaire's estimate of the cost of excavating the canal through which the waters of the Mediterranean shall be made to flow from the Gulf of Gabes into the Algerian *Chottes*—in realizing his project of converting the desert region of South Algeria and Tunis into an inland sea—will not exceed $4,000,000. ——A scheme for the systematic and thorough exploration of the seats of ancient empire in Western Asia is receiving the warm encouragement of the English press.——On July 5th, in a swamp at Little Britain, N. Y., there were discovered and subsequently unearthed the remains of a mastodon, the skeleton being almost complete, and in an excellent state of preservation. The most perfect skeleton of this prehistoric animal that has heretofore been found was taken from a swamp near Newburg, N. Y. (in the same neighborhood), in 1845.——Mr. Stanley is off again on an expedition through the "dark continent." This time he accompanies M. Dutalis, a Belgian military officer, in nominal command of one of the expeditions of the International Association for the exploration and opening up to commerce of Africa. The expedition penetrates from Zanzibar.

The Secretary of the United States Commission to the Exhibition shortly to be held in Australia has issued the announcement that all information respecting the transportation of goods may be had by addressing Mr. R. W. Cameron, of New York, or Mr. Henry W. Peabody, of Boston. All exhibits will be admitted free of duty. For the information of intending exhibitors from this country, it is further announced that, "Owing to unforeseen delays in the early stages of the Exhibition, the notice given has in some cases left scarcely sufficient time to prepare exhibits and transmit them to Sydney for the opening in September next. Under these circumstances, the Commission will receive exhibits up to the time of closing in March, 1880, and can arrange with the Victorian Commissioners to have them sent on in time for the opening of the Melbourne Exhibition in that year."

Mining, Metallurgy, etc.

The Future of Alaska.—The *Mining and Scientific Press* of recent date practically indorses the position we took long ago, in urging a thorough exploration of our vast Alaskan possessions, with the view of spreading broadcast reliable information concerning the mineral and other natural resources of that far-off region. Should the results of such an exploration prove to be any thing like as favorable as the few superficial and imperfect observations that we have concerning the region would seem to warrant us in anticipating, the government would speedily be relieved, by the influx of immigration, of the necessity and expense of protecting the sparse settlements by military force, and of a recurrence of the mortifying circumstances of an appeal by American citizens to a foreign power, for the dispatch of an armed vessel to Sitka, for the protection their own government could not afford them. Aside from this, there is the unanswerable argument to be advanced that, if Alaska is good for any thing, the people of the United States, who paid for it, have the right to know it.

The Utilization of the Phosphorus of phosphoretic irons from the slag in which it is concentrated, in the notable dephosporizing process that has awakened the interest of iron and steel-makers everywhere, is a problem which is said to be attracting the attention of Mr. Thomas, one of the inventors of the Gilchrist-Thomas process. The plan he suggests involves the roasting of the cinder he obtains from blowing pig, to convert all the protoxide compounds of iron and manganese present into insoluble peroxide salts. The slag is then ground fine, and treated by means of acids in a manner analogous to that which is commonly practiced in the manufacture of phosphorus and its commercial compounds. The concentration of phosphoric acid in the slag formed in the converter in the operation of the Gilchrist-Thomas process is said to amount to from 7 to 15 per cent, an amount which may be sufficiently large to makes its recovery commercially practicable, though, when we consider the cheapness and abundance of other sources of phosphorus, the suggestion seems scarcely a feasible one.

A Notion of the Value of the South Carolina Phosphate Deposits may be had from the published statement that the yearly production of fertilizers manufactured therefrom amounts to 200,000 tons, of which about two thirds are exported to England, and the remainder consumed at home.

Engineering.

Apropos of the Protection of American Interests in the matter of the projected Isthmian Canal, to which we lately made brief reference, the daily press records the fact of a special examination into the relations of the United States government to the projected Darien Canal, for the forthcoming "International Code Conference," by Mr. A. P. Sprague, Secretary of the American Committee. The newspaper accounts proceed to state that his report will show that, by a joint treaty entered into between this country and Great Britain April 19th, 1850, and which is still in force, the contracting parties mutually agree to guarantee the neutrality of any canal across the Isthmus between North and South America undertaken by any parties upon fair and equitable terms, with the consent of the government through whose territory it should run. By reason of this treaty, the government of the United States is precluded, in the opinion of Mr. Sprague, by both national and international law and policy, from claiming exclusive control over the enterprise. Thus, Mr. Sprague argues, M. de Lesseps and his company are already assured by treaty of the protection of Great Britain and the United States, and he assumes it to be a matter of course that the other governments of both continents will, at the proper time, join in an international act declaring the canal forever free and open and exempt from attack in time of war, and extend to it their mutual protection.

As to the prospects of the Lesseps project, in spite of much unfavorable criticism, they certainly seem to be promising. This energetic person has gone to work at once, and by a judicious presentation of his enterprise, aided not a little by his own *prestige* as the creator of the Suez Canal, has already succeeded in securing large subscriptions of money for the work. Of the considerable amount thus obtained, the sum of 750,000 francs, it is announced, has been placed on deposit with the agent of the Colombian government, in London, which sum is required by the terms of the concession granted to the Canal Company, as surety that the work will performed. Thus far, M. de Lesseps has been as good as his word, so far as concerns his assertions that the "sinews of war" would be promptly forthcoming at the proper time; and while there may be good reason to doubt the wisdom that selected the route finally decided upon by the International Conference, there can be none, in the light of subsequent events, on the point that M. de Lesseps and his coadjutors are in dead earnest in putting their plans into execution.

The Completion of the Mississippi Jetties.—The daily press has given publicity to the report of Captain Eads, under date of July 10th, that the greatest depth and width of the jetty channels required by the acts of Congress relating to the same had been secured; and on the same day, the accuracy of the statement and the completion of the great undertaking were certified to the Secretary of War by Captain M. R. Brown, of the Engineer Department, detailed as government inspector of the work. From this published announcement we learn that "the jetty channel is over thirty feet deep, and a good navigable channel of twenty-six feet, measured at the lowest stage of the river, exists at the head of the pass."

A Rival to the Panama Railroad will shortly appear in the field, if the report may be credited that the Costa Rican government is engaged in the construction of a railroad to connect the two oceans. The report in question not only affirms that the work of construction is under way, but that the road will be finished within a year or two. The desirability of such a competing line on the Isthmus will be best appreciated by those to whom business or travel has given a taste of the extortionate tolls of the monopoly that has control of Isthmian traffic.

New Railroad Connections in Pennsylvania.—Work is very rapidly pushed forward on the new connecting link which is building by the

Philadelphia & Reading Company, from Wayne Station on the Germantown branch of the Reading Railroad, to Tabor Station on the line of the North Pennsylvania Railroad, to complete its connection for through traffic to New York by way of the latter road and its connections. The grading of the branch for the coal traffic (Richmond branch) is completed, and that for passenger traffic, including the construction of a fine iron bridge over Germantown avenue, is well under way. The prospect for the new road to Bethlehem, connecting the line of the Lehigh Valley road with that of the Pennsylvania, the construction of which would give the former road an outlet for its traffic to Philadelphia, independent of the North Pennsylvania road, which, in virtue of the lease lately effected by the Reading road, has passed into the hands of a rival, is reported to have been finally decided upon. A surveying party, it is announced, will be put to work to survey the line of the new route in a few days.

The Holly System of Public Steam-Heating, if current newspaper report is to be relied on, may soon be put to practical test in this city, a project to introduce the same having received the sanction of the Commissioners of the Sinking Fund. Its advocates claim that it will demonstrate a saving to the city of $150,000 annually in the heating of the public buildings; and a much larger sum in saving the removal of ashes from the dwellings adopting it, and in the removal of snow and ice from the streets and avenues through which the pipe system will be laid. The interests of the city have been so guarded that, should the new system prove to be popular and successful, a considerable revenue will be derived from it.

THE NEW TELEPHONE.—The French government has granted the first concession ever made by it for running telephonic wires to Mr. Frederick A. Gower, of Providence, R. I. Hitherto the telephone has not been used in France, the commissioners appointed by the Telegraph Department to examine existing systems not being satisfied with them. The currents in Gower's telephone are generated by a magnet strong enough to allow a battery to be dispensed with. The increased power is gained by abandoning the horse-shoe form. It is shaped in a half-circle, with two arms bent into the center, where they nearly touch each other. Signaling is effected by blowing through a reed like that of a parlor-organ, this reed being cased in a tin tube and passing under the diaphragm, near the poles of the magnet. Superfluous vibration, the cause of indistinctness, is thus dispensed with. The vibration in the reed sets up an intense vibration in the diaphragm, which transmits a magneto-electric current to the receiver, producing a clear, loud note. The speaking-tube is then taken up, and the voice is heard distinctly. The diaphragm and magnet are inclosed in a small metal box, from which the reed emerges. A company is forming in Paris to carry out the invention. Applications for its use are coming in from all quarters.

The *Titusville Herald* of July 22d says:

"Large as the production is at the present time, there is one redeeming trait in connection with it, and that is, that the most dangerous territory lies in the Bradford oil-fields. From certain reports that used to be circulated in the oil country, outsiders might have been led to suppose that Kentucky, Tennessee, and Virginia (to say nothing of points more foreign to our shores) were so undermined with vast caverns of oil, that by this time these ought to have been submerged, and have formed the beds of immense navigable lakes of oil. This is the light that certain interested parties once tried to get these places viewed in, and free use was made of certain portions of the oil-region press for that purpose. But we know to-day that they are out of all consideration as factors in the estimation of possible prices on the market. The only really dangerous place is the Bradford District, and it is the doings of that district upon which we can alone base our calculations. Even the entire lower country, with its Crawford's Corners excitement, has no terrors for the oil mind in these days, nor is it ever likely to have while oil remains at current prices. There is probably plenty of undeveloped small well territory in the lower country; but when prices reach a point when it may be profitable to drill it, we may depend upon it that the days of an over prolific Bradford will have gone by."

THE ENORMOUS OIL PRODUCT.—From the same paper quoted above we take the following announcement issued from the General Office of the United Pipe Lines, Oil City, Pa.:

"Notwithstanding every reasonable effort on the part of the United Pipe Lines to provide facilities for storage of oil in the Bradford District, the increased production and large accumulation of oil on storage has rendered our tankage again inadequate for the storage of all oil offered.

"It is therefore necessary to notify the trade that on and after this date and until further notice, no oil will be received from wells in the Bradford District unless the owner has provided therefor either cars or other receptacles for shipment, or tankage for the storage of the same.

"Tank owners are notified that their tankage capacity is not relieved by sale of oil, unless it is actually removed from the custody of the lines.

"Where a tank owner's tankage capacity is once filled, no oil will be received under his tankage contract until room is made by actual delivery of the oil or its equivalent by the lines to the owner or his vendees."

WASHINGTON TERRITORY.—Quicksilver in considerable quantity has been found in a ledge of decomposed rock at Pataha City, W. T.

THE EDDY VALVE PATENT SUIT.

The following circular will interest all who have any of the above valves in use:

DEAR SIR: We beg leave to inform you that the litigation existing for several years past concerning the alleged infringement of valves made under the Eddy patent, owned by us, upon the Coffin patent, owned by the Boston Machine Company, is ended in favor of the Coffin patent; and we have settled with the Boston Machine Company for all claims, past, present, and future, and have made an arrangement with them under which we shall continue to make and sell the Eddy valve the same as in the past.

This settlement includes all persons buying or selling or using valves made by us, and frees our customers (past, present, and prospective) from any claim under the Coffin patent based upon valves of our own manufacture.

Yours truly,

THE MOHAWK & HUDSON MANUFACTURING CO.

WATERFORD, N. Y., Aug. 1, 1879.

From the above it will be seen that the Mohawk & Hudson Manufacturing Company's valves are free from the patent suit which has so long hung over them, and that *its* customers are included in the settlement.

MAINE MINING NOTES.

A recent visit to some of the Blue Hill mines found every thing progressing finely. The mill of the Blue Hill Copper Mining and Smelting Company is fast reducing the large ore-heaps that have lain for months awaiting treatment. Its machinery "works like a charm," and one needs only to see it to be convinced that it is *the* means for concentrating such ores.

The shaft at this mine is down some 60 feet from the surface of the cut from which it was started, and 70 feet or more from the original surface of the ground. Besides this shaft, some open-cut work is being done. Some fine silver ore, with a good showing of gold, has been recently taken out. Every thing on these premises does credit to the Superintendent, Mr. B. O. Cutter.

The Douglass Company has nearly completed timbering its mine, and will soon begin taking out ore again. It has decked over its large open cut, leaving a shaft near the eastern end. The shaft is an incline, dipping some 60° or 65°. The timbering is 6 × 12 feet in the clear. The incline is now down some 50 feet (length of incline—not perpendicular), and a drift has been run easterly some 15 feet. The new shaft, which is situated a few rods easterly, is down 20 feet, and is looking finely.

A hoisting-engine is on the spot, and will be placed in position for hoisting from the incline before sinking is resumed. A siphon was laid some time since for supplying water from a pond near by, for washing ore and other purposes, but, not working satisfactorily, has been given up, and water is to be taken from a brook, using a hydraulic ram. A cargo of about 100 tons of ore was shipped from this mine a few weeks since.

Work has recently been begun on the Atlantic mine, adjoining the Douglass on the east. Work is also in progress on the Bisbee, Stover Hill, and Wheal Freddie; but I am unable to give particulars.

At Sullivan, I learn that Mr. C. W. Kempton has resigned his position as engineer on the Sullivan, and taken charge of the Waukeag mine. At Gouldsboro', the property of the Gouldsboro' Silver Mining Company is reported to be looking finely. A cargo of ore is to be shipped as soon as possible. I also learn from one of the directors that a Burleigh drill is to be put in operation soon.

A company was organized at Bar Harbor, July 14th, to be known as the Petit Manan Silver Mining Company. Capital stock, 40,000 shares, with a par value of $10 each. Officers—E. H. Greely, President; Levi B. Wyman, Treasurer; J. B. Redman, Secretary; A. S. Jarvis, Superintendent. Directors—E. H. Greely, W. C. Ricker, A. S. Jarvis, A. F. Greely, J. W. Davis. The property of this company is located on Petit Manan Point, in the town of Steuben, in Washington County. Stock will be sold at present for 50 cents per share.

I hope to be able to give full information in regard to the mines in the eastern part of this county soon.

DIRIGO.

SURREY, ME., July 28, 1879.

LABOR NOTES.

ONE hundred experienced workmen from cutlery establishments of Sheffield, England, are reported to have been engaged by a Connecticut establishment.

THE Amalgamated Association will hold a meeting at Youngstown, Ohio, on the 5th inst.

GENERAL MINING NEWS.

ARIZONA.

We are indebted to the Prescott *Arizonian* of the 19th ult. for the following extracts: "The section of country around Bumble Bee station, 50 miles south of Prescott, shows a number of ledges carrying gold and silver in paying quantities. Among the richest are the Valencia and Opal. A contract was let yesterday to sink 300 feet on the Mono lode, and 300 feet on the Savage lode in the Hasayampa District.

"The mills in the Tiptop, Tiger, Peck, and Big Bug districts are all running, and the work on most of the mines is progressing satisfactorily.

"The Accidental mine, of the Walker District, has been bonded for $50,000; $12,000 worth of placer dust was taken out of the gravel of the gulches in the vicinity of Prescott during the past year, notwithstanding the season was very dry.

"The Vulture mill, of Wickenburg, has been started up, a large amount of rich ore being extracted ready for milling.

"The Black Warrior mine is looking well. Some of its extensions are opening up favorably.

"The mines at the head of Sycamore Creek, on the Juniper Mountains, show up well in copper and silver."

Considerable placer-digging is being done at Ehrenberg, and fine placer gold is taken out.

MINES NEAR YUMA.

From Yuma correspondence of the San Diego *Union*:

"I have visited several of the mining districts of the Gila and Colorado rivers, and am convinced that the mineral is there. The miners are sanguine of the outlook; only capital is needed for development. At the Cargo Muchaco, one of the leading districts, a 10-stamp mill has just been started, and is crushing some very fine ore. All these mines are free-gold quartz. There are about twenty ledges in the district. It is in San Diego County, three miles from the railroad and fifteen miles from the Colorado.

"The President of the Clifton Copper Mines has reached Yuma with fifty Chinamen, who have been employed as miners. Labor is so unreliable, and such high rates are demanded, that either Chinamen must be employed or the works must be closed. About 8000 pounds of black copper are now produced from these mines daily, and sent to Philadelphia to be refined."

BRITISH COLUMBIA.

Recent advices from British Columbia from the Cassiar mines are of an encouraging character. Many of the hydraulic claims are paying well, and it is

stated that more money has been taken out of the mines this season than was taken out the whole of last year. The entire section of the country bears a promising aspect. A new creek, called Proserpine, has been discovered, which yields very well.

CALIFORNIA.

THE BODIE DISTRICT.

We are indebted to the *Standard* of July 19th for the following:

"The north drift from the east cross-cut on the 385-foot level of the Standard mine has now a total length of 272 feet. About 4 feet of ore have been taken out on the foot-wall. The ledge is presumed to be between 15 and 20 feet in width. The ore is good and the upraise in this ledge is 215 feet in height. In the stopes, the ledge is 18 feet wide. The flow of water on the 700 level still prevents progress of work at that point.

"The north drift 200 level of the Summit mine has a total length of 286 feet. The ledge is two feet wide.

"Vigorous operations have been commenced on the South Noonday mine. The principal work is in sinking on the vein in the incline, the total depth of 70 feet being attained. The ledge is 2½ feet wide at the bottom and assays from $40 to $90 per ton. A double compartment shaft will soon be commenced, with machinery and appliances sufficient to sink to the depth of 1200 feet.

"Operations on the Vortex mine are being pushed with considerable vigor. The winze now being sunk on the 200 level, is in good ore, which assays very well; the ledge is two feet in width.

"The work of drifting on the 350 level of the South Bulwer mine is progressing. The ledge is three feet in width. The south drift, from the east cross-cut, 380 level, of the Bulwer mine, has a total length of 100 feet. The ledge is of good ore. This mine, like the Standard Consolidated, is troubled with water on the 700 level, stopping work at this point.

"The east cross-cut of the South Bodie mine is in 170 feet, with nothing of interest to note.

"The Cornucopia mine, the north extension of the Washburne, situated east of the Summit mine, has been sold for $16,000.

"The mill of the Bodie mine is steadily running, and the general appearance of the mine is favorable. The cross-cut from the old shaft, first level, is in 374 feet. The drift south on ore, second level, is in 92 feet. The main east cross-cut, third level, is in 267 feet."

The *Chronicle* of the 19th ult. says: "The winze on ledge No. 1 on the old works of the Consolidated Pacific is 250 feet in depth below the level of No. 2 tunnel, equal to 280 feet below the surface. The ledge at the bottom of the winze is strong and well defined, and the ore of good quality. The new machinery of this company is on the ground, and when erected will compare favorably with any mine in the district.

"The Mono shaft is now 30 feet below the 400 level. The joint east cross-cut on the 400 level is in 320 feet and looking well.

"The Boston Consolidated Mining Company is a recent incorporation, with a capital of $10,000,000, divided into 100,000 shares, and owns what is said to be good mines, on the west slope of the Queen Bee Hill, the Last Chance, and the Ben Butler. Work will be immediately commenced on this property, which is said to contain fair milling ore in sight."

THE MODOC CONSOLIDATED MINING COMPANY ANNUAL REPORT.

The annual meeting of this company was held at San Francisco on the 8th of July. The superintendent says:

"Since last annual report, the following operations have been carried on at the mine: Main tunnel, 1000-foot level, has been run 1423 feet; 718 feet of shaft and winze have been sunk, and 361 feet of drift driven; cutting out station for hoisting works at 300-foot level, and other preparatory work for placing machinery in position at 1000-foot level, may also be added to above. During the first month of the year (July, 1878), 328 tons 825 pounds of ore were taken from the mine and smelted. The furnaces, after a three months' run, were then closed down, and operations confined to driving the main tunnel, 1000-foot level, and sinking the connection shaft, ore extraction being discontinued with the exception of a few chloriders, who took out some 400 tons of ore. Results of prospecting work for past month are very encouraging for the future outlook of the mine, the existence of ore-bodies at the drift started at the 1000 level being established beyond controversy. The main tunnel should be completed to the 2000-foot point in the course of the next 4 or 6 weeks, when our full force will be concentrated on prospecting. The Secretary's report showed receipts for the year of $396,000, of which $200,000 were derived by assessments 5, 6, 7, and 8, and $123,000 from the bullion produce."

COLORADO.

THE PELICAN MINE.

The Georgetown *Miner* of July 26th says that this mine continues to employ a large force of men, principally sub-lessees. The lower tunnel cuts the lode 750 feet from its mouth, and, from the point of intersection, a vein is opened 300 feet east and 900 feet west. A shaft has been sunk 150 feet east of the tunnel to the depth of 160 feet, which is the lowest point yet reached in the mine. There is considerable ore in the lowest level, and the shaft also carries a fine body of mineral. A late mill-run from a point 15 feet below the tunnel level gave a return of 122 ounces of silver to the ton. Some selected ore recently milled over 500 ounces.

The Little Annie mine, situated at the Spring Gulch, has its discovery shaft down 70 feet, and has produced sufficient ore to pay expenses of sinking, thus far. The ore taken out from this shaft has run from 200 to 700 ounces to the ton of galena sulphurets and silver glance.

A big strike is reported in the Peru District, in various mines located on the Cooper and Ruby mountains. Old prospect-holes are being sunk down, and are showing good ore. The old black quartz in these lodes ran as high as 75 to 100 ounces. About 60 or 75 men are prospecting there. These mines are located about 14 miles from Georgetown, and are easily accessible. The lodes are large fissure-veins, low-grade on the surface, but said to improve as depth is attained.

THE GILPIN COUNTY MINES.

We condense the following items from the Colorado Springs *Mountaineer* of July 27th:

"The Monmouth-Kansas mine, in Gilpin County, employs 70 men. Sixty stamps are continually at work on ore from this mine, which has been in operation for six years; showing a net profit to date of $150,000. The shaft on the Berryman-Kansas mine is down 400 feet. The vein is 2 feet wide, 5 inches iron, and the rest mill dirt, averaging 4½ ounces per cord.

"Rich deposits of carbonates have been struck in the Mississippi mine in Custer County.

"The Judge Pendry mine, on Carbonate Hill, is now producing about 15 tons of ore per day, which averages $300 per ton. The sale of the London mine, in Park County, to Senator Jones, is announced, the consideration being $400,000.

THE MINES OF OAK CREEK.

The Fremont County *Record* of Cañon City, dated July 26th, says of the Oak Creek mines: "The Oak Creek mining camp extends from Yorkville on the Cañon City and Silver Cliff stage route almost to the head of Hard Scrabble Cañon, a distance of 9 miles up Oak Creek, taking in all of the mountains south of the Green Horn range. On each side of the creek, this district shows thoroughly-defined veins of good paying mineral between well-defined walls, with crevices of from 4 to 8 feet in width. The majority of the veins are galena, running from 50 to 70 per cent lead. Among the principal mines in the immediate vicinity of Galena are the Lone Sheaf, Queen of the Hills, Beecher, Apex, Maggie, Cora Lipe, Silver Brick, Hero, and Copperopolis. The Queen of the Hills carries a large vein of galena containing 50 to 60 per cent of lead, and assaying from 20 to 27 ounces silver. In addition to the shaft on this mine, a 75-foot tunnel has been constructed, showing a crevice eight feet wide, with perfect walls and good mineral, select assays giving as high as 300 ounces of silver.

"Some three miles further up the creek from Galena, near Hallam Spring, are found the Victor Bobb, San Francisco, Colorado, Vesta May, Black Giant, Pauper's Escape, Cameron, and the Rains mines.

"The Victor Bobb is down about 50 feet, with a large vein of paying galena. The Rains mine is remarkable as containing fully 70 per cent of lead. The Lone Sheaf, located near Galena, has been taken hold of by the Astor Mining and Milling Company, and stocked for $500,000. The ore from this mine is free-milling, and an assay made by Mather & Geist, of the Pueblo smelter, showed 370 ozs. silver, and 30-100 ozs. gold to the ton."

THE SILVER CLIFF MINES.

From the *Miner* of July 25th we condense the following:

The Johnny Bull mine is working 85 men. The diamond drill, working on the Denver mine, in the carbonate beds, is down 280 feet. The Orphan mine is down 100 feet. Over 300 men are at work in the mines at Copperville, which are located 13 miles northwest of Silver Cliff. Twenty-five thousand dollars was refused by the owner of the Eureka lode, situated in Johnson's Gulch. This mine is only down 12 feet, and shows 3 feet of galena.

Whether a sale has been effected of the Bassick mine, may be inferred from the following paragraph, which we insert *verbatim*:

"The Bassick is sold. The Bassick mine is not sold. The Bassick mine is to be sold soon. The Bassick mine is not to be sold. The above can be considered as reliable, as it comes from 'parties who ought to know.'"

The Buffalo-Hunter mine, located near the King of the Valley, was recently bonded for $23,000; $3000 paid down as forfeit. Ore recently taken from the Dirigo mine ran very high, and very much resembles the Bassick ore; as yet, but slight depth is attained in this mine.

The Hillerton *Occident* says that all the machinery for a smelter will be there in a week.

A correspondent of the *Graphic*, in writing from Georgetown, says of the Dunderberg mine:

"This property, recently stocked by New York parties, is recognized, on all sides, as among the finest and most valuable pieces of mining property in the district. Only the upper and older workings of the mine were visited, time not permitting a descent to the lower levels. The New York parties have been in possession only about forty-five days, and in this time have accomplished much toward getting the mine into shape. Previous to this time, the mine has been operated by lessees; individuals, and, in some cases, small parties of miners having certain blocks of ground assigned them, which they were privileged to work on a royalty of twenty-five per cent. These lessees have been for a long time in capital pay, and, in anticipation of a sale, had pushed their work night and day, gouging right and left, wherever it seemed most profitable, and leaving the mine in wretched shape for their successors. A large force of men was found employed cleaning the drifts of rock and débris, and putting the mine into shape for systematic and regular work. A large force was also engaged in putting on the improvements at the mouth of the main tunnel necessary for thorough and extended operations. Unlike the Pay Rock, the Dunderberg appears to consist of but a single vein; but it carries a large quantity of ore, which, as is already understood, is very rich. The upper and older workings, from which several hundred thousand dollars' worth of ore has been taken, contain a great deal of ground which has not yet been touched at all, and much of the ground is probably equal to any thing in the mine. In an underhand stope in this part of the mine, solid mineral can be seen fifteen inches wide, where the lessees left off work when the property changed hands."

The *Register-Call* says the shaft in the Silent Friend on Silver Mountain is down 100 feet. A good streak of mineral has been uncovered in the Famine. The Cyclops and Cyclops No. 2 are being energetically developed, and some good ore is being taken out. The name of Pitkin Mining District is given to a newly-discovered district at the head of Anthracite Creek, nine miles northwest of Crested Butte. In the Ruby Chief, the first discovery in the camp, wire silver has been found. The Ruby King, says a correspondent of the Colorado Springs *Gazette*, "has a pay vein eight feet thick of solid ore, and it is safe to say that this eight feet will average 2000 ounces of silver to the ton." In about three weeks, this new camp had about 200 inhabitants. In addition to the other good news, a five-foot vein of anthracite coal is reported to have been discovered within two miles of the camp.

A train of 150 burros has started for the Dolores District. Ore from one of the lodes has yielded in mill-runs 318 ounces. There are about 200 men at work.

A wire tramway 1700 feet long is being erected at the Ute and Ule mines in San Juan.

Virginia City was incorporated April 14th, 1879. There are at present 100 buildings complete and in course of erection.

DAKOTA.

THE BLACK HILLS.

From the *Pioneer* of the 19th ult. we extract the following: "The mines of the Strawberry and Galena districts are attracting considerable attention. The Union Hill mine, which, taken with the Comet, Silver Spray, Summit, and May, and a portion of the rich adjoining properties, are consolidated under one ownership. This property shows a body of ore 266 feet in width that prospects well.

"The tunnel of the Keystone mine has been driven 175 feet, and looks well.

"The Oro Fino mine shows a face of 30 feet of good ore. This mine is on the opposite side of the gulch from the Sunday and Keystone mines.

"The Dakota Maid's shaft is being rapidly sunk.

"The smelter has been shut down after a successful run, owing to defective fire-bricks.

"The Rochford mines look well, and show promising prospects.

"The California mine, in this district, has a shaft down 50 feet, showing good ore.

"The tunnel of the Cashier mine, of Lead City, is in 250 feet, and being rapidly pushed to connect with the shaft.

"The 'clean-up' at the Hildebrand & Foot Mill of 300 tons of ore from the Reno mine yielded an average of $21 per ton."

The *News* of the 23d ult. says that a hole drilled in the Resumption mine to the depth of 215 feet showed, for the last 20 feet, ore which assayed $15 per ton.

From the *Times* of the 25th ult. and various dates, we take the following:

"Work on the Bingham mine is progressing; the vein is 11 feet in width. A contract will be let to run a tunnel for 200 feet from the Deadwood Gulch to the shaft.

"The placers of Potato Creek are panning out very well, and many good 'clean-ups' are reported.

"A 25-stamp mill is to be erected on the Carter mine, on Elk Creek. A contract was closed on July 22d, stipulating that it should be completed within 80 days.

"The Aleck mine, of Poorman's Gulch, is showing some very good ore, and this mine is pretty well developed, and a very good future is promised.

"The General Merritt Gold and Silver Mining Company has been incorporated. This property is situated in Bear Butte District, on the Elcorman belt.

"Coal has been discovered 10 miles north from Crook City, at a depth of 65 feet. Very fine samples were encountered, not in a solid body, however, but only in spots.

"The Giant mine, located in Strawberry Gulch, near the Anchor mine, has been sold.

"The Racine mill, which has been stopped on account of scarcity of water, opened up again on the 24th ult."

The *Herald* of the 22d ult. says that a mill will probably be purchased for the Pierce mine. The work on this mine is going forward under contract.

NEVADA.

The *Silver State* of July 21st says: "We are informed that a large body of good milling ore has been developed in the Lucky Dog mine at Unionville. This mine, which was known in early days as Anderson, has been re-located. At a point a few hundred feet above an old tunnel, run in early days to develop the lead, he found the ledge, which is large and well defined, and is all ore rich enough to mill."

THE LEWIS MINING DISTRICT.

The *Stock Report* says: "This district is situated in Lander County, eleven miles south of Battle Mountain. This district is extensive, very mountainous, and the croppings are bold and easily traced. The veins are of chloride on the surface, but change to sulphurets at the water-level. The water-level ranges from 10 to 80 feet below the surface. The country rock is a porphyritic granite. The locations in the district number at least one hundred. Only two companies have been incorporated, namely, the Eagle Silver Mill and Mining Company and the Betty O'Neil Mining Company. The oldest mine in the district is owned by private parties, who have worked their mine continuously for four years, but have been satisfied to take their profits and not incorporate. The property has paid from the start. The ore yields $75 per ton, and is extracted from a five-foot vein. The mine is developed through the aid of a tunnel. The present working-depth is 320 feet. The Eagle is another well-known piece of property. The company's mill, 10 stamps, is closed at present, as the ore supply down to the lowest level—260 feet—has been exhausted. A tunnel is now being pushed in 520 feet below the surface to develop the deep ore-body. This tunnel struck the ledge when in a distance of 100 feet, and is being run on the ledge.

"The Betty O'Neil Mining Company, the second to incorporate, run in a tunnel a distance of 99 feet. At this point a fine vein was cut. Drifting on this vein—85 feet south and 20 feet north—has exposed rich ore the whole length. The record of ore worked reads this way: Ten tons, battery assays, $134.07; ten tons, battery assays, $139.77; two and one half tons, battery sample, sulphuret ore, not worked, $117.70.

"The face of the south drift is all in ore, and the last assay was $612.61 per ton for the first-class ore and $111.50 for the second. The course of the ledge in the Betty O'Neil is north and south, and the pitch is east. This is the only rich ledge developed in the district which has an eastern pitch. One or two shipments of bullion have already been made from the Betty O'Neil, and the mine has paid since the first day's work."

THE COMSTOCK.

From the summary of the Gold Hill *News* of July 23d we condense as follows:

"The preparations for prospecting the ground lying south and west of the big bonanza, and on the 1500, 1650, and 1750 levels of the Sierra Nevada mine are worthy of note.

"The mines at the north end are moving slowly along, still troubled with water in some places; but the gray of the dawning of a better day is seen. Connection on the 2000 level between the Union shaft and drift has been made, and is of consequence, since this long drift south to the Ophir incline is to be used to carry off the water from the stopes of the Sierra Nevada, the steaming flood being thence to be conveyed to the C. & C. shaft, and there raised to the tunnel level.

"The requisite changes of the pumps, etc., at the Ophir and C. & C. shaft are also being made, and soon all water encountered will be easily disposed of. It will not be long before the big engine at the Union shaft will be in place, with its expansion cylinder 100 inches in diameter, and then water will cease from troubling.

"At the flooded mines, the water is continually yielding, and has about given up the 2100 level. With the increased facilities for handling it, which are being brought into use at this time, the work of conquering it will proceed more rapidly.

"At the Chollar-Norcross-Savage shaft, sinking is going on again, and the programme for prospecting the Chollar and Potosi is laid down.

"There is little new in the Divide or Gold Hill mine. Belcher and Crown Point are nearly ready to open the next lower level, about which no little interest centers.

"Justice is worthy of a passing observation. The cross-cuts there are full of interest and promise. Alta, too, gives an encouraging outlook rather than an occasion for a drop in prices."

THE SUTRO TUNNEL.

The Lyon *Times* of July 19th says:

"The high temperature in the Sutro Tunnel greatly retards operations. In the south lateral drift, but one shift of four men is working. These work in ten-minute reliefs, at the end of which they retire to the drift connecting with the Hale & Norcross incline, where the temperature is cooler by about fifteen degrees. In the north lateral drift, the temperature is not so elevated, and three shifts of six men each and one boss work there. When they become overheated, they retire to the Combination drift to cool off. In that drift, the temperature is only about 90 degrees. In the main tunnel, the temperature is 110 degrees.

"The connection with the Savage mine is being enlarged, in order to obtain a greater supply of fresh air. The temperature at this point is over 100 degrees. For some days past, the men working there have enjoyed the use of the cooling-station at the 1600 level of the Savage; this could be reached by ascending the pump-shaft for about sixty feet above the tunnel level. But they no longer enjoy that privilege, and are now compelled to seek their own drifts to cool off. A blower is being put in place at Shaft No. 2, and pipes connecting with the headings of the drifts are being laid. This work will be finished in a week or ten days, and the air in the drift will be cooler by some ten degrees. It being impossible to use machine drills at present, all the boring is done by hand-drills."

The registers of temperature at Sutro Tunnel are full of interest, and we append them in this connection. At the Chollar-Norcross-Savage shaft connecting with the tunnel there is a door, and the temperature on the tunnel side of that door is 83 degrees; in the drift from the tunnel to that shaft, 85; from this connection to the Julia curve it runs from 94 to 100; at the Julia junction, 100; at the Hale & Norcross connection, 91; in the Hale & Norcross incline, 88; in the south header of the Sutro Tunnel, 110; at Justice, 1600 drift, 110; at the north header of the lateral branch which starts about half-way between the Chollar-Norcross-Savage shaft connection and the Julia curve, 97 degrees.

THE YELLOW JACKET MINING COMPANY—ANNUAL REPORT.

The annual meeting of this company was held in San Francisco on the 21st of July, covering its operations for the fiscal year ending June 30th. From the superintendent's report, we learn that the shaft has been sunk and timbered 1088 feet, being at this date 2636 feet deep from the top-wall plate to the lowest set of timbers. A water-tank has been constructed at the 1550 level of the shaft capable of holding 31½ tuns, or 7554 gallons of water, and one at the 2300 level holding 21¼ tuns, or 5096 gallons. An eight-inch pipe for compressed air has been placed in the shaft extending from receivers on the surface to the 2300 level. A large dump station has been made at the shaft in the 2300 level, with which the shaft was connected in February last.

The secretary's report shows the receipts for the year to have amounted to $446,129.24, of which amount $360,000 was derived from assessments Nos. 31 and 32. The principal disbursements during the year were on account of the destruction of the new shaft, the details of which are so full of interest that we append them below:

		Per cent of total cost.
Freights—V. & T. RR., for supplies and machinery	$5,259.85	1·68
Labor—Miners' wages	134,318.83	42·84
Machinery—All foundry work and machinery	89,532.93	28·53
Iron and Steel—Includes all hardware	12,842.42	4·10
Timber—Includes all wood work	24,028.64	7·68
Wood—Includes coal and fuel	22,082.85	7·06
Water and ice	4,188.10	1·34
Powder and fuse	8,845.00	2·83
Candles and oil	3,623.02	1·15
Masonry—Includes sand, stone, etc.	843.00	0·26
Taxes—State, county, and town taxes	2,694.00	0·86
Constructing Engineer—W. H. Patton's services, supervising construction and erection of machinery	2,500.00	0·79
Sundries—Includes various petty bills not specified	1,819.55	0·58
Total	$312,578.19	100·00

RECAPITULATION.

Cost new shaft to July 14th, 1877	$127,609.49
" " year ending June 30th, 1878	545,714.09
" " year ending June 30th, 1879	312,578.19
Total cost to June 30th, 1879	$985,901.77
Number feet sunk November 1st, 1876, to June 30th, 1877	768
" " June 30th, 1877, to June 30th, 1878	780
" " " 1878, " 1879	1,088
Total depth, June 30th, 1879	2,636
Average cost of shaft per foot	$374

Average rate of sinking per month, 82⅔ feet.

THE UNION CONSOLIDATED MINING COMPANY—ANNUAL REPORT.

The annual meeting of this company was held at San Francisco on the 21st of July. From the superintendent's report we take the following:

"Owing to the inconvenience of prosecuting our work through the Ophir shaft, we have, in connection with the Sierra Nevada and Mexican companies, purchased the shaft and works formerly known as the North Consolidated Virginia shaft, through which our future developments will be made. This shaft (now known as the Sierra Nevada, Mexican, and Union Consolidated joint shaft) is situated near our north line and is equipped with the most powerful and efficient hoisting-engine on the Comstock, capable of sinking to a vertical depth of four thousand feet. The Shaft Company has also contracted for pumping machinery capable of handling 1000 gallons of water per minute from a depth of 4000 feet. The pumping-engine will be of the compound condensing style, having an initial cylinder 64 inches in diameter, and an expansion cylinder one hundred inches in diameter. It will be the most powerful pumping-engine on the Comstock, and, together with the pumping machinery, is now being built in San Francisco, and we expect to have it running by the first of December next. The Shaft Company has also contracted for a powerful pump hoisting-engine which will be capable of handling the pump machinery in the shaft and do all the pit-work connected therewith. The shaft has now reached a point corresponding to the Ophir 2000 level, and will be connected with our lateral drift on that level during the present month. To expedite the sinking of the shaft, an upraise has been started from the Sierra Nevada, east drift, on their 2000 level (Union Consolidated 2100) at a point vertically under the shaft, and preparations are being made to start a winze down from the Sierra Nevada 2200 (our 2300) level; also at a point vertically under the shaft. By adopting this system, the shaft will reach the 2400 level by the 1st of December, and enable us to start our explorations from that point. We have also started a drift south from the Sierra Nevada incline winze, at their 2200 station. This drift will be the main lateral drift on that level, and be continued south through the Mexican and Ophir ground to a connection with the Ophir incline, and form the basis for a system of development on that level.

"In conclusion, I will state that, although as yet no actual development has been made in our mine, yet the known existence of an ore-body in the Sierra Nevada mine to our north (which on their 2200 level has been exposed to our line), and the increased facilities which will be afforded for exploration by the Sierra Nevada, Mexican, and Union Con. shaft when it reaches the 2400 level, give good promise for the future, and reasonable hopes on which to base our expectations for a successful result of our next year's explorations."

The receipts of this company during the year were $451,000, of which amount $343,100 was derived from assessments.

NEW HAMPSHIRE.

The Boston *Commercial Bulletin* of July 26th contains the following:

"The Landaff Gold Mining Company is running $11 a ton at their large mill at Bath, which leaves a clear profit of $6 a ton, the working costing $5. There is greater activity in mining in that section than ever before. William Lawry, of Newburyport, Mass., has just completed and is now working a new mill at Lyman, and has machinery ready for a second mill. It is expected that other mills will soon be erected."

NEW MEXICO.

THE GOLD MINES NEAR ELIZABETHTOWN.

From the Cimarron *News and Press* we learn that the Indiana Gulch, near the Rio Colorado, the claims prospect very well, and considerable coarse gold has been found. A two-foot crevice of decomposed quartz, in panning, showed 18 colors. These claims are about 9 miles from Elizabethtown, and full of promise for the future.

NORTH CAROLINA.

The Ore Knob Copper Mining Company has declared a dividend of $37,500, payable August 4th, and expects hereafter to pay semi-annual dividends. The company is now making about 150,000 pounds of ingots per month. A new development of ore in the south end of the property has recently been made, showing a vein about 14 feet wide, fully 7 feet of which goes to the furnaces without any cobbing. The company expects to produce fully 3,000,000 pounds of copper per annum, with its present capacity, from these rich ores lately developed.

UTAH.

The *Graphic*'s Salt Lake City correspondent, writing under date of July 21st, says: "The great event of the past week is the strike, in the Ontario, of the vein from the new shaft 600 feet below the surface, and 100 feet below its lowest workings by the old shaft. Professor Newberry has returned here from Nevada, and will at once begin the examination of our different mining districts and our principal mines. I visited the Great Basin mine at Stockton the past week. This mine has been sold to a Boston company, which is putting up machinery, steam-hoisting works, etc., for the economical working of the ore-body that has lately been discovered in the bottom. Stockton, once a flourishing camp, is now nearly dead, owing to the low price of lead, which her low-grade mines could not meet. The Chicago furnace, however, is running one stack. The Waterman is soon to start up. Jacobs has been purchased

by the Great Basin Company, and will be used for concentration purposes. There has been a strike in the once-famous Emma mine of a four-foot vein of rich ore. The shipments of bullion, lead and copper ore, and refined lead for the week ending July 19th were as follows: Three cars Mingo bullion to Pittsburg, three cars Horn-Silver bullion to Pittsburg, four cars Horn-Silver bullion to Omaha, three cars Germania bullion to Newark, six cars Germania refined lead to San Francisco, two cars Yosemite lead ore to Omaha, one car Winnemuck lead ore to Omaha, one car I. & A. copper ore to Baltimore. Bullion, $275,504; lead ore, $64,000; refined lead, $130,261; copper ore, $21,775; total, $491,540. The only sale for the week is ten cars of Chicago bullion to the Germania, at $40 per ton for lead, and 3 cents per ounce below New York prices for silver."

The Silver Reef *Miner* of July 19th says:

"The bullion shipments from Silver Reef for the four weeks ending to-day aggregate the snug little sum of $97,359.79; this week's shipment being $22,765.70. Considering the fact that but three mills, working only twenty stamps, are at present in operation, this showing is not a bad one for the camp. The Barbee mill, at the time of its destruction by fire (June 23d), was turning out $1000 per day. It follows, then, that, if it had not been for the fire, the Barbee would have added $26,000 to the shipments: making a grand total of $123,359.79 in twenty-eight days. These figures carry their own conclusions."

NEW PATENTS.

The following is a list of the new inventions relating to Iron, Coal, Mining Machinery, Chemical Apparatus, and the treating of Precious Metals, etc., from *The Official Gazette of the United States Patent Office*, for the week ending July 22d, 1879:

No. of Patent.	*Title of Invention.*	*Name of Inventor.*	*Residence.*
217,677	Dynamo-Electric Machine	Charles F. Brush	Cleveland, O.
217,684	Process and Apparatus for the Manufacture of Salt	William W. Elmer	Bay City, Mich.
217,690	Mechanical Telephone	Martin L. Hoover	Bushnell, Ill.
217,699	Furnace for Steam-Boilers	Henry Mason	Chicago, Ill.
217,710	Circulating-Tube for Steam-Boilers	Robert E. Sherlock	Rochester, N. Y.
217,722	Ore-Washer	Ernest Bazin	Paris, France.
217,731	Electro-Magnetic Motor	John Doyle (a)	Hoboken, N. J.
217,744	Electric Lamp	John C. Porter	St. Louis, Mo.
217,754	Ore and Rock-Crusher	Theodore R. Timby	Nyack, N. Y.
217,758	Combined Air and Steam-Engine	James M. Whiting	Providence, R. I.
217,773	Carbon Telephone	George D. Clarke (b)	Chicago, Ill.
217,781	Sextuplex Telegraph	Thomas A. Edison (c)	Menlo Park, N. J.
217,782	Duplex Telegraph	Thomas A. Edison (c)	Menlo Park, N. J.
217,785	Apparatus for Utilizing Exhaust-Steam	Nils Werner Ericson	Stockholm, Swed'n
217,786	Boiler-Furnace	Franklin P. Everhart	Tama City, Ia.
217,787	Traction-Engine	Frank L. Fairchild	Mt. Vernon, O.
217,791	Miners' Lamp	John H. Gable	Shamokin, Pa.
217,792	Electric-Lighting Apparatus	A. Wilford Hall	New York, N. Y.
217,795	Combined Forge, Emery-Wheel, and Drill	Philetus B. Hillyer (d)	Rochester, Minn.
217,800	Apparatus for Enriching Illuminating-Gas	Joshua and Jas. Kidd	Wandsworth, England.
217,807	Electro-Magnetic Motor	John C. Ludwig	San Francisco, Cal.
217,822	Pyrometer	Aug. H. Seyfarth	Brunswick, Ger.
217,834	Air-Compressor	William Thomas	Jersey City, N. J.
217,836	Fluid-Pressure-Brake Apparatus	Geo. Westinghouse, Jr.	Pittsburg, Pa.
217,837	Piston-Diaphragm for Car-Brakes	Geo. Westinghouse, Jr.	Pittsburg, Pa.
217,838	Automatic-Brake Relief-Valve	Geo. Westinghouse, Jr.	Pittsburg, Pa.
217,845	Steam-Engine Condenser	William L. Church (e)	Brooklyn, N. Y.

RE-ISSUES.

8,814	Regenerative Hot Blast Stove	Charles Cochrane	Stourbridge, Eng.
8,815	Gas-Retort	Thomas P. Rowland	New York City.

(a) Assignor of one half his right to C. Coles Dusenbury, New York City.
(b) Assignor to Western Electric Manufacturing Company, same place.
(c) Assignor to Western Union Telegraph Company, New York City.
(d) Assignor to Martin J. Hurd, same place.
(e) Assignor of one half of his right to the Buckeye Engine Company, Salem, O.

PROPOSALS.

For the benefit of many of our readers, we compile weekly such proposals and solicitations for contracts, etc., as may be of interest. The table indicates the character of proposals wanted, the full name and address of parties soliciting, and the latest date at which they will be received:

Erecting Bridges and Making Roadway between Dayton and Sutro, Nev.; Board of Commissioners of Lyon County, Nev	Aug.	4,	1879.
Erection of two-story Freight Station on Pier 2, Harsimus Cove, N. J., 118×465 feet; William H. Brown, Harsimus Cove, N. J	"	4,	"
Steam-Heating Apparatus; Commissioners of Venango County, Franklin, Pa	"	5,	"
Removal of Pier (old), 37 N. R., and building pier (new) 26 N. R.; Department of Docks, 117-119 Duane street, New York	"	6,	"
Laying Walks in City Hall Park; Department of Public Parks, New York	"	6,	"
Rip-Rap Wall, Charlestown, R. I.; George Carmichael, Jr., Shannock Mill, R. I	"	6,	"
Pardee Hall, Rebuilding, Easton, Pa.; S. L. Fisler, Secretary of Building Committee, Easton, Pa	"	6,	"
Bridge; Commissioners of Venango County, Franklin, Pa	"	7,	"
Improving Vernon avenue, near Flushing street, Long Island City; Board of Commissioners, Improvement District, Long Island City	"	7,	"
Draw-Bridge, Pier, and Abutments on Hunter's Point avenue, over Dutch Kills; Board of Commissioners Improvement District, Long Island City	"	7,	"
Harbor Improvements, Detroit, Mich.; S. M. Mansfield, Major of Engineers, Detroit, Mich	"	7,	"
Jetties; Major John M. Wilson, U. S. Engineer's Office, Erie, Pa	"	9,	"
Steam-Heating; City Clerk, Columbus, O	"	11,	"
Dredging in the Thames River, Conn.; Major J. W. Barlow, Engineer's Office, U.S.A., New London, Conn	"	12,	"
Erection of New Buildings at the State Agricultural College; R. G. Baird, Secretary, Lansing, Mich	"	12,	"
Sinking Shafts on the Savage and Mono Mines; Nathaniel Ross, Prescott, Arizona	"	12,	"
Arching Tunnel, Wellsburg, W. Va.; A. M. Buchanan, Wellsburg, W. Va.	"	12,	"
Narrow-Gauge Locomotive; Chief-Engineer St. John's & Indian River RR., Titusville, Fla	"	15,	"
School-House, Wellsville, Columbia County, Ohio; John W. Menough, President Board, Wellsville, O	"	16,	"
Steam-Heating, Des Moines (Ia.) School Buildings; J. M. St. John, Secretary Board of Directors	"	18,	"
Wire, Nails, etc.; D. H. Rucker, Quartermaster's Office, Philadelphia, Pa.	"	20,	"
Metal Work for Light-House, at Cape Henry, Va.; O. E. Babcock, Major of Engineers, U.S.A., Light-House Engineer, Fifth District, Baltimore, Md	Sept.	10,	"
130,000 tons of Steel Rails to be Manufactured in New Zealand; John Knowles, Under-Secretary for Public Works, Wellington, New Zealand	"	30,	"

A project for building a railroad from Galveston to Rio Grande City, opposite Camayo, Mexico, is being pressed, with a prospect of success.

Twenty-one new railroads are projected in Ohio this season, and the indications are that fifteen will be constructed. Thirteen of the above are narrow-gauge.

THE COAL TRADE REVIEW.

NEW YORK, Friday Evening, Aug. 1, 1879.

Anthracite.

The event of the week has been a great farce in the way of a coal sale. The Delaware, Lackawanna & Western RR. Co. offered, at auction, on Wednesday, 50,000 tons of coal, for which the following average prices were secured, comparison being made with the average prices of the previous sale:

Tons.		Average prices, July 30th.	Average prices, June 25th.
15,000	Broken	$2.30	$2.17¾
5,000	Egg	2.45	2.20½
25,000	Stove	2.74	2.55
5,000	Chestnut	2.55¾	2.37½
50,000	General average	$2.56	$2.39¾

It will be observed that the July prices show advances ranging from 12¼ to 24½c. It is well known, however, that as great efforts were made to "bolster" this sale as were ever made. In one case, the auctioneer, failing to get as high a bid as he wanted, called on the last bidder, who raised his own bid 5c. per ton. The public sees through these operations, and, so far as the trade is concerned, they are a positive injury to it. When such proceedings are resorted to, it indicates a weakness in the position of those who have coal for sale. The Reading Company, knowing what would be done, came out previous to the sale with a circular for August, showing an advance. Since then, the Delaware & Hudson Canal Co. has issued a circular, announcing quite a reduction. The other companies appear to be inclined to leave circulars alone, and to get what they can for their coal.

The facts in relation to the situation are, that the companies have been producing coal very largely at a considerable loss, at the same time hoping that prices would improve, while now they see a decline staring them in the face, and an effort is made to sustain the market by making the public believe that prices are going to advance rapidly, thereby hoping to create a speculative feeling, and consequently a greater demand. Dealers and consumers are not now in want of coal, and the indications are, that they will not want much during the next 30 days, in which event, should the large production be continued, prices must go lower. There seems but one possible help for the trade, and that is a suspension of mining, while now there does not appear to be any probability of this. The following press dispatch was received here last night. It fairly covers the outlook, excepting that it is not positive enough relative to Mr. Gowen's probable action.

"A meeting of individual coal operators of the Schuylkill region was held this afternoon at No. 318 Walnut street, Philadelphia. A committee was appointed to confer with Acting President Keim, of the Philadelphia & Reading Railroad Company, in reference to the proposed stoppage of two weeks during the month of August. That official informed that his company had not yet decided upon such a course. The views of President Gowen will be obtained before definite action is taken. Although there is a strong desire on the part of individual operators to improve trade by such suspension, it is not believed that the Reading Railroad Company will join in the movement. The meeting adjourned until Saturday next."

It does seem that there is nothing to do but wait for the supply to overtake the demand, and that if the companies can not stand up under their losses, they will go into the hands of receivers and await the improvement. The financial showing of the several companies will probably be worse at the end of this year than at any previous time.

The outlook for a strike is very discouraging. That, or some accident that would cause a month's suspension of coal mining, would certainly be a blessing to the trade. Without such, there is nothing to do but to look the situation fairly in the face, and try to act like business men.

A meeting of representatives of the companies who supply the Western market was held in this city yesterday, and the object of the meeting, as expressed, was to devise some means for securing more remunerative prices for coal. They adjourned without accomplishing any thing. It was the sentiment of the meeting that natural causes would regulate the trade better than any artificial influence.

The Philadelphia & Reading Coal and Iron Co., under date of July 28th, quote as follows, for the month of August, f. o. b. Port Richmond, for shipment beyond the Capes of the Delaware:

	Lump.	Steamboat.	Broken.
Hard white-ash coal	$2.75	$2.75	$2.75
Free-burning white-ash coal			2.55
North Franklin white-ash coal			2.55
Schuylkill red-ash coal			
Shamokin coal			
Lorberry coal			2.75
Lykens Valley coal (Brookside)			3.50

	Egg.	Stove.	Chestnut	Pea.
Hard white-ash coal	$2.75	$2.90	$2.60	$1.75
Free-burning white-ash coal	2.60	2.90	2.60	1.75
North Franklin white-ash coal	2.60	2.90	2.60	1.75
Schuylkill red-ash coal	2.75	3.00	2.60	1.75
Shamokin coal	2.75	3.00	2.60	1.75
Lorberry coal	3.00	3.15	3.00	
Lykens Valley coal (Brookside)	3.50	3.50	3.25	

The production of anthracite coal last week was 552,593 tons, as compared with 557,823 tons the previous week, and 469,918 tons the corresponding week of 1878. The total production from January 1st to July 26th is 13,898,662 tons, as against 8,498,437 tons for the like period of last year, showing an increase this year of 5,400,225 tons.

Bituminous.

Freights are a little easier, and those who made contracts based on a very low rate, delivered, are more encouraged. With this exception, there is nothing new in the trade. Prices are unchanged, and new business is limited and of an unimportant nature.

We publish the following letters from our regular correspondents. Prices are given elsewhere :

"BUFFALO, July 29, 1879.

"Trade very quiet, except that old orders taken in May and June are being filled to the Western trade. LEE & LOOMIS."

"CINCINNATI, July 30, 1879.

"There have been very heavy rains at Pittsburg and above, which have raised the river enough to enable shippers to get out over 10,000,000 bushels of coal for this and lower markets. Prices have been high here, on account of the low water, but will decline very much when the shipment arrives. Prices will be about as follows :

Youghiogheny, wholesale, afloat	7½ cts.
Camden, " "	5 "
Pomeroy, " "	5 "
Youghiogheny, retail, delivered	10 "
Camden and Pomeroy, retail, delivered	8 "
Anthracite, Wilkes-Barre and Lackawanna, retail	$5.00
" Lehigh	6.00

"THE CONSOLIDATED COAL AND MINING CO."

"HAMILTON, July 29, 1879.

"With the prospect of coal remaining low during the winter, there is very little business doing at the present time, but a good trade is looked forward to on the approach of the cold weather. The quantity of coal used in Hamilton this year will doubtless exceed that of any previous year. The benefit is already being felt of the working of the 'National policy,' and our protective tariff has induced the influx of considerable American capital and enterprise. The rolling-mills, that have been idle for a number of years, are now worked by an American company, and running night and day ; a large nail factory, in connection with the same, will also soon be in full operation. The Hamilton Iron Forging Company is running night and day, and is about doubling the capacity of its works by the erection of another hammer. The Meriden Britannia Metal and Silver Ware Company, of West Meriden, Conn., is erecting a large factory for the manufacture of their superior goods in Canada. So that the increased quantity of coal used by these large factories, and the domestic consumption by the large number of hands they employ, will greatly enhance the coal trade in Hamilton. H. BARNARD."

"LOUISVILLE, KY., July 30, 1879.

"Our retail prices changed yesterday as follows :

"Kentucky, on cars, 7c. per bushel for lump ; Kentucky, on cars, 6c. per bushel for nut.

"The last Pittsburg coal sold in the river brought 12c. per bushel.

"There will be a fresh supply here the last of this week, on which there is no price fixed. BYRNE & SPEED."

PITTSBURG, July 31, 1879.

COAL.—A freshet in the Ohio occurred last week, of sufficient height for loaded barges, but not for coal boats. The high water was mainly from the Alleghany, which rose rapidly Saturday, and, swelling the Ohio to barge navigation, all that kind of craft lying in port departed on Sunday with their cargoes, for the lower markets. Coal boats carry 24,000 bushels (900 tons) ; barges about half as much. The boats, fully freighted, draw 8 feet ; the barges, 6 feet. Boats cost, when new, $700 ; barges, being more substantially built, cost $900. Boats, being more unwieldy, are frequently sold below for broken lumber, at nominal rates ; though many, when sound and strong, are returned for further use. Barges are all brought back when their cargoes are discharged, and returned to the mines for fresh lading. Coal destined for the lower Mississippi is usually transported in boats ; though barges are used, especially in cases like the present, when floods are not deep enough for boats. In the late rise, 8,000,000 bushels (307,000 tons), in which are included some 500,000 bushels of slack and 800,000 bushels of coke, were dispatched down the river. Its effects upon prices along the whole route of 2000 miles to New Orleans, will be known next week. At present, it is only safe to say that a general lowering will ensue. As soon as the tow-boats return with unladen craft, mining will be resumed, but at what wages has not yet been determined—probably at from 2 to 2½ cents per bushel, which would be at the rate of 54 to 67 cents per ton. There are loaded, and remaining in port, 240 of the large coal boats, containing about 6,000,000 bushels of coal. Our quotations stand as they were until returns from below are received of the arrival of the late shipments :

PRICES AT PITTSBURG.			
Wholesale, on board	4 cts. per bushel.	$1.06 per ton.	
Retail, delivered	6@7 cts.	1.85 "	
AT CINCINNATI.			
Wholesale, on board	10 cts. per bushel	$2.65 per ton.	
Retail, delivered	12 cts. "	3.18 "	
AT LOUISVILLE.			
Wholesale, on board	11 cts. per bushel	$2.92 per ton.	
Retail, delivered	15 cts. "	3.97 "	
AT NEW ORLEANS.			
Wholesale, on board	50 cts. per barrel	$4.83 per ton.	
Retail, delivered	65 cts. "	6.28 "	

Bushels are rated among dealers here at 76 lbs. ; 26½ bushels make a ton of 2000 lbs., nearly.

The barrel that rules the measurement at New Orleans, contains 2 4-7 bushels of 80 lbs. each, making about 200 lbs. Nine and two thirds of these barrels weigh a ton, within a small fraction.

COKE.—The uniform production and consumption of 30,000 tons a week continues without change on either side. That there is a prospective enlarged demand, the vigorous work going on in the construction of some 850 new ovens makes more than probable, as these will add between 7000 and 8000 tons to the weekly production. Prices remain steady. We quote, as before, $1.15 to $1.30 per ton of 2000 lbs., on board cars at ovens.—*American Manufacturer.*

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Aug. 1, 1879.

American Pig.—This iron looks as though it were preparing for a grand "boom." Whether the prices will come down as fast as they go up, is another question. No. 1 iron at $20 appears to be an established thing, while several hundred tons are reported to have been sold at $21, and $22 is being asked in some cases. The cause of this advance is the scarcity of this number. It was thought that an advance in American iron would be met by cheap Scotch iron; but there has been such a demand for iron freights from Great Britain that freight rates have advanced from nothing to 7s. 6d.@ 10s. per ton, thereby taking away the advantages of the cheaper iron. We learn of a sale of 1000 tons of No. 1 Lehigh iron at $19.50 ; 100 tons No. 1 X Poughkeepsie and 150 tons of No. 2 X Lehigh on private terms. We quote No. 1 Foundry at $20@$21 ; No. 2 Foundry, $18@$19; and Forge at $17.

Scotch Pig.—There is a much better business doing in this article than there was a month or so ago. We note sales of 600 to 700 tons of Coltness, Eglinton, and Carnbroe at full prices. We quote Eglinton at $20 ; Coltness, $22; and Gartsherrie, $21.50.

Rails.—Makers have things about their own way, being booked ahead with orders, in some cases, for nearly a year. In fact, our mills do not appear to be able to meet the demand, and, as a consequence, we note sales aggregating about 7000 tons of English iron rails at $40@$40.50, and 3000 tons of American at $41, October and November delivery. Sales of 7500 tons of steel rails are reported for the week. It is almost impossible to give a quotation for steel rails. We shall say, however, $47@$50, according to delivery.

Messrs. John H. Austin & Co., of London, under date of July 15th, say :

"There has been a slight inquiry for iron rails during the past month, for American account ; the present low quotations having attracted the attention of some buyers. Steel rails are steady at quotations given."

They quote ordinary iron rails at £4 5s., f. o. b. Tyne, Tees, or Wales ; and steel at £4 10s.@£5 5s., Liverpool, and £4 10s.@£4 15s., Wales.

Old Rails.—We note a sale of 400 tons at $24.50, and 500 tons at $24.75, and quote at $25.

Wrought Scrap.—Sales aggregating 600 tons on private terms are reported. This article is becoming scarce and strongly concentrated. It would not be surprising should wrought scrap suddenly advance two or three dollars per ton.

We publish the following letters from our regular correspondents. Prices are given elsewhere :

"BUFFALO, July 29, 1879.

"There is a steady advance in price of iron in this market. Furnaces are not willing to take large orders for future delivery. Another advance is looked for to take effect August 1st. We hear of no large purchases in this vicinity.

"PALEN & BURNS."

"COLUMBUS, O., July 29, 1879.

"The market for pig-iron continues strong and active, and the situation seems more favorable to the seller than for some time past. Stocks continue low. The present consumption seems to be in excess of the production, and the blowing in of a number of furnaces, probably, will not effect a decline in the market.

"KING, GILBERT & WARNER."

"LOUISVILLE, KY., July 29, 1879.

"The market is very stiff, and prices are advancing on nearly all grades."

"RICHMOND, VA., July 26, 1879.

"Nearly all of our manufacturers are busy, and the demand for most descriptions of iron—pig and bar—continues active and firm at quotations.

"ASA SNYDER."

"ST. LOUIS, MO., July 28, 1879.

"The demand for pig-iron continues good, with prices strong at present quotations. Buyers concede increased prices with less reluctance than formerly, and the outlook is for good business, and at possibly better figures.

"CARD & HOFFER."

OUR IRON MINES AND THEIR PRODUCTS.

From the Marquette *Mining Journal* of the 26th ult. we take the following :

"The ore and pig-iron shipments by lake for the season of 1879, up to and including Wednesday, July 23d, were as under :

MARQUETTE. Mine.	Gross Tons.
McComber	5,367
Manganese	2,487
Rolling Mill	250
Cleveland	37,833
Lake Superior	43,878
Winthrop	6,845
Humboldt	8,320
Edwards	4,086
Republic	61,469
Champion	42,373
Albion	722
Marquette	201
Total ore from Marquette	213,831
PIG-IRON.	
Carp Furnace	2,627
Pioneer Furnace	1,233
Total pig-iron	3,860
QUARTZ.	
Carp River Iron Co	1,288
L'ANSE.	
Michigamme	15,426
Spurr	408
Total	15,834
Ore to local points	16,074
Total ore, pig-iron and quartz over M., H. & O. Railroad	250,887

ESCANABA.	
Angeline, specular	9,007
Angeline, hem	1,616
Barnum	11,118
Bessemer	5,465
Curry	2,726
Cambria	2,497
Cheshire	7,119
Cleveland	5,967
Cleveland Hematite	7,182
Cyclops	11,360
Edwards	303
Emmet	7,142
Goodrich	2,644
Jackson	30,418
S. Jackson	8,940
Saginaw Sec. 4	684
McComber	4,444
Michigamme	9,691
Mitchell	4,287
National	11,831
New York	29,169
Norway	13,336
Palmer	10,101
Quinnesec	10,221
Saginaw	19,830
Salisbury	15,502
Superior, hard	16,539
Superior, hem	289
Vulcan	6,584
Winthrop	2,336
Section 12	2,348
Foster	644
Total	271,340

"Combined, the two iron districts turned the half million corner in the

matter of shipments the past week. This indicates a total output of over a million tons in 1879.

"The total lake shipments from the Menominee Range mines, up to and including the 23d inst., are given at 52,053 tons. During a corresponding period last year, only 28,284 tons were shipped.

"Marquette is considerably—53,743 tons—behind in ore-shipments, as compared with 1878, while Escanaba is nearly, if not quite, that much ahead.

"Escanaba still leads Marquette 57,504 tons in the amount of lake shipments—a gain of only 495 tons for Marquette during the week ending July 23d.

"Total lake shipments from the district up to July 23d, footed up 501,005 gross tons—an increase of 14,075 tons over a corresponding period last year.

"The Republic does not appear to be doing as well in the way of shipments this season as last, having shipped only 61,469 tons up to and including July 23d, as compared with 107,108 tons during a corresponding period last year.

"The Albion mine has commenced shipments again, after several years of enforced idleness. It is located just west of the Saginaw.

"At the Manganese mine, 47 men, all told, are employed in four pits, though in two of them little else than preparatory work is being done. The shipments thus far—about 2000 tons—have all been of manganese ore.

"The south side Jackson mines are booming this year, the shipments thus far amounting to over 8000 tons. New and still more promising developments in that quarter are reported.

"Nine hundred and thirty-four cars of ore were hauled into Escanaba in one day, over the C. & N. W. RR., from the Marquette and Menominee districts."

REDUCTION OF BRITISH WAGES.

LONDON, July 31.—The iron-masters in the Cleveland (north of England) trade yesterday gave notice of a five per centum reduction of the wages of their workmen. The matter will be referred to arbitration.

CARDIFF, WALES.

Messrs. Tellefsen, Wills & Co. say: July 15, 1879.

"Since the first of July, there has been a great demand for coal on account of the differences between the colliery proprietors and their workmen; and while prices generally remain unchanged, from three pence to one shilling per ton extra has been paid for quantities of coal required to load vessels that would otherwise have been on demurrage. The strike of the steam-coal colliers is now practically at an end. The haulers no longer affect the position, as the men at work can raise more coal than is required to supply the demand. Some of the house-coal colliers are still out, but the only effect of that has been to temporarily increase the price of house coal from sixpence to one shilling per ton.

FREIGHTS.—Coal freights out to the Baltic have generally declined during the past month, and are now lower than they have been for years. To the French ports, they remain unchanged. Mediterranean freights have also a downward tendency. To the East, they still keep firm, and there is a good demand outward; but there have hardly been any home freights in the market. To the Brazils and to the West Coast, there has been a considerable demand for ships outward. Tonnage out to the West Indies has been very little in demand. Charterers have been holding off, expecting to get steamers outward-bound to the East Coast ports at low rates."

IRON NOTES.

The Gautier Steel Company (Limited), of Johnstown, Pa., is building an additional span to their rolling-mill, 160 feet long by 65 feet wide, in which will be put several double presses for shearing plow-plates, and a 2500 and 3500 pound steam-hammer. They have just finished a stock-shed for keeping a stock of blooms and breaking up steel for rolling, covering 12,000 square feet, which will make the total area covered by the buildings about five acres.

THE Pittsburg (Pa.) *Telegraph* of July 30th says: "It is said that iron ore has been discovered near Montour Run, on the Ohio River, about eight miles from the city. Youngstown and Cleveland iron men have been prospecting about the place for two or three weeks, and a Cleveland man has succeeded in leasing a five-acre piece of a farm for $3000. An offer of $10,000 was also made to another farmer in the vicinity for the lease of twenty acres from his farm, but he declined the offer. The farmers near Ewing's mill are also prospecting, and are intensely excited about the discovery, and are asking fabulous prices for their land. Our informant says there is no doubt that ore has been discovered there. The Montour Run Railroad, a branch of the Pittsburg & Lake Erie road, traverses the section."

THE ALBANY & RENSSELAER IRON AND STEEL COMPANY.—We are indebted to the Troy *Daily Times* of recent date for the following data, condensed from a very elaborate and exhaustive review of the works of the company. The various buildings connected with the departments of this company are the Albany iron-works department, the Bessemer steel-works department, and the Rensselaer iron-works department, which, if placed in an alignment, would extend a distance of three fourths of a mile.

The number of persons employed at these different works is as follows:

Albany Iron-Works	700
Bessemer Steel-Works	640
Rensselaer Iron-Works	600
The Columbia and Fort Edward Furnaces	70
Total	2,010
Total annual wages	$1,000,000

Amount of coal consumed:

Albany Iron-Works, tons	40,000
Bessemer Steel-Works, tons	30,000
Rensselaer Iron-Works, tons	35,000
Furnaces, tons	36,000
Total	141,000

The Albany Iron-Works last year manufactured:

Finished iron of all kinds, tons	14,000
Railway engine, truck, and car axles, number	6,000
Railroad fish-bars or plates, tons	2,000
Railroad spikes, kegs, 100 lbs. each	50,000
Boiler and bridge rivets, kegs	24,000
Iron and steel cut nails, kegs	15,000
Bolts and nuts, kegs	5,000
Boat and ship spikes, kegs	6,000
Capacity for manufacturing, annually, horse-shoes, kegs	40,000

The Bessemer Steel-Works produced last year:

Steel ingots, tons	90,000

The annual capacity of the Rensselaer Iron-Works is:

Rails, gross tons	80,000
Merchant steel, billets, tons	25,200
Finished steel, sleigh shoe, etc., tons	6,000

CONDITION OF THE BLAST-FURNACES OF THE UNITED STATES, JULY 1ST, 1879.—We are indebted to the *Iron Age* of July 24th for the following statistics showing the condition of the blast-furnaces of the United States on the 1st of July, as compared with similar periods for the two previous years:

FURNACES IN BLAST JULY 1ST.

	1877.	1878.	1879.
Charcoal	87	64	81
Anthracite	87	95	101
Bituminous	85	89	95
Total	259	248	287

FURNACES OUT OF BLAST JULY 1ST.

	1877.	1878.	1879.
Charcoal	181	202	176
Anthracite	139	130	125
Bituminous	123	128	107
Total	443	460	408

Comparing the above data by percentages, we have the following tables:

PERCENTAGE OF FURNACES IN AND OUT OF BLAST JULY 1ST, 1877, 1878, 1879.

	In blast.			Out of blast.		
	1877.	1878.	1879.	1877.	1878.	1879.
Charcoal	32	24	34	68	76	66
Anthracite	38	42	44	62	58	56
Bituminous	41	40	47	59	60	53

The same authority, under date of July 31st, gives the following figures, showing the recipts of iron at Pittsburg, Pa., from January 1st to July 1st, with a comparison of the receipts of the first half of 1878:

	Pig-iron. Tons.	Ore. Tons.	B. & B. Tons.	Scrap. Tons.	M. Bar. Tons.	Cin. Tons.
Penn. RR.	35,898	905	8,816	8,041	.....	3,530
P., F. W. & C. RR.	25,560	36,276	1,260	8,092	360	250
A. V. RR.	1,740	480	426	2,628	.....	.....
C. & P. RR.	2,352	65,732	4,068	3,217	.....	2,160
P., C. & St. L.	332	.....	48	900	.....	.....
P., Va. & C.	290	3,938	48	72	.....	.....
West Penn	18,743	.....	.....	.....	.....	.....
B. & O. RR.	5,572	.....	2,580	981	180	.....
P. & L. E. RR.	8,460	44,025	.....	.....	.....	.....
Total	118,947	151,356	17,246	23,931	540	5,940
By river	7,153	15,432	311	6,352	.....	.....
Total	126,100	166,784	17,557	30,283	540	5,940
Total, 1878	96,371	126,692	13,823	31,928	1,688	16,656
Inc., 1879	29,729	40,072	3,734	.....	.....	.....

Pittsburg consumes one fifth of all the pig-iron made in the country, According to the table, the receipts of pig-iron from outside of the city for the first six months of 1879 were 126,100 tons, against 96,371 tons in 1878, an increase of about 31 per cent. It should be noted that this table includes but little of the iron made by the Pittsburg furnaces. It probably includes that made by the Isabella, but none made by the Lucy, Shoenberger, Clinton, Eliza, or Soho.

While the facts above given relate to the Western iron trade alone, they are full of interest for the whole trade.

COAL NOTES.

ABOUT 40 Baltimore coal dealers and journalists lately visited the Schuylkill Coal Region.

A RICH deposit of bituminous coal has been discovered within half a mile of Greenwood station, four miles southeast of Ringgold, Ga.

THERE is considerable dead-work and many improvements under way in the vicinity of Wilkes-Barre. The machine-shops are well supplied with orders.

THE Litchfield Coal Company, of Litchfield, Ill., while recently prospecting for a deeper vein of coal, struck oil. At the time the oil began to flow, the workmen had bored 200 feet below the bottom of the shaft, or 700 feet below the surface of the ground.

ACCORDING to the Pottsville *Miners' Journal*, the picnic of the Knights of Labor on the 23d ult., was a grand success, the attendance having been from 10,000 to 15,000 men. Among the prominent speakers were Samuel F. Cary, Charles H. Litchman, and U. S. Stevens. The meeting was very orderly.

The Durham miners have accepted the award of Lord Derby, the umpire, reducing their wages one and a quarter per cent in addition to the former reduction. This is a very strong indication of the conciliatory spirit which now prevails in Northern England relative to the labor question; for there are 57,000 persons to be directly affected by Lord Derby's award, and none has protested against his decision.

THE NOVA SCOTIA COAL TRADE.—The *Monetary Times* of July 26th says the coal trade of Nova Scotia is reported to be continually improving. The Acadia Company is shipping to order all the coal it can raise. The Halifax Company has shipped more the past week than it has done in any previous week for years. The Intercolonial is also doing a good business.

THE BITUMINOUS COAL DISTRICT.—The Pittsburg *Telegraph* of July

23d says: "There are fifty-eight coal mines in the second bituminous district, forty-one drifts, two slopes, and fifteen shafts. Twenty of these mines are located in Mercer County, and the coal runs from twenty-eight inches to four feet in thickness. But little has been done at some of these mines the past two or three years. About a half-million tons were mined in the district during the last year; but with the revival of iron making and the settlement of some railroad difficulties, it is probable the output this year will be much larger."

THE PENNSYLVANIA COAL COMPANY'S NEW SHAFT.—On the Barnum property, about a quarter of a mile above the L. & B. Junction, and a hundred yards from the main road, the Pennsylvania Coal Company is now engaged in sinking a shaft which will have the largest capacity of any mine in the anthracite coal region. Mr. Joseph Handler, Wilkes-Barre, who has the contract for the stone work, has just completed the heavy masonry of the shaft, a distance of about forty feet to the rock, and it is a very substantial job. Messrs. Smith & Co., of Plymouth, are now at work drilling through the rock. This is done by steam; and the shots are fired by a battery, dynamite being the explosive used. They will have to go down to a depth of 75 feet to strike the seven-foot vein of coal, and this will take them about three months. It is intended to extend the shaft to the fourteen-foot vein, about 100 feet deeper. The opening is 12 by 47 feet, and will be large enough for four carriages, with room for a fan at each end and a double plunger pump. A second opening is also being sunk about three hundred yards distant, which is 12 by 21 feet.

Mr. Handler is now at work on the masonry for the breaker foundation, which will be completed in a few weeks. The breaker will have a capacity of 2000 tons per day—nearly double that of any other in this section. Mr. Bradley Downing has charge of the work of grading a short plane to the foot of No. 3, where the coal from the new shaft will be shipped on the company's road. The cost of sinking this shaft and erecting the breaker will probably exceed half a million dollars.—*Pittston Gazette.*

ACTIVITY IN COKE IN THE CONNELLSVILLE REGION.—The *Republican Standard* of Uniontown says: "A run through the coke country about Mt. Pleasant develops the fact that every coke oven in the district is ablaze. Works which have been lying idle for years are now in the full tide of prosperity, and the outlook is certainly encouraging. New ovens are being erected on every hand, prominent among which are the works of A. A. Hutchinson & Bro., at Mt. Pleasant, known as the Standard mines. At these works, 115 ovens have been erected in the past few months, and 60 more are to be erected immediately, when the capacity will be 20,000 bushels of coke per day. The same company has 92 ovens at what is known as Globe mines, near Broadford, and the combined works put over 30,000 bushels of coke upon the market daily. Messrs. Boyle & Hazlett, near Mt. Pleasant, are building 100 new ovens, making 282 ovens in all for this company. Rumors are prevalent that Messrs. H. Clay Frick & Co. intend erecting, at an early day, some 300 ovens in the immediate vicinity of Mt. Pleasant. The civil engineers have been laying out the ground lately, and the affair is rapidly assuming the appearance of reality. At the Buckeye mines, John M. Cochran, owner and operator, thirty or forty new ovens are about completed, ready for active work. Cas. Markle, of West Newton, is breaking ground for a number of ovens on what is known as the June Bug Branch Road, an offshoot of the Mt. Pleasant branch of the Pittsburg Division of the Baltimore & Ohio Railroad."

THE following is the monthly comparative statement of gross receipts, tonnage and passengers, of the Philadelphia & Reading Railroad Company, for the month of June, 1879 and 1878:

	1879.		1878.	
Gross receipts:	Month.	Year to date.	Month.	Year to date.
Railroad traffic	$1,179,140.34	$6,738,322.28	$1,267,874.35	$6,231,569.25
Canal traffic	93,076.98	358,750.02	179,741.92	381,133.00
Steam colliers	50,814.16	394,923.86	42,328.49	318,008.97
Richmond coal barges	19,982.77	84,328.16	8,713.96	43,719.56
Total Railroad Co	$1,343,014.25	$7,576,324.32	$1,498,658.72	$6,974,430.78
Reading Coal and Iron Co	1,047,683.19	5,232,383.80	920,506.36	3,882,198.77
Total of all	$2,390,697.44	$12,808,708.12	$2,419,165.08	$10,856,629.55
Tonnage and passengers:				
Tons of coal on railroad	745,711·04	4,234,715·06	754,653·15	2,958,661·03
Tons of merchandise	437,899·19	2,290,159·09	253,552·18	1,825,625·03
Passengers carried	761,063	3,905,019	589,975	3,568,306
Coal transported by steam colliers	48,818	340,292	51,416	319,023
Tons of coal mined:				
By Coal and Iron Company	398,195·18	2,195,493·18	333,193·06	1,377,003·08
By tenants	108,442·09	664,656·16	147,506·07	546,038·19
Total mined farm lands owned and controlled by company and from leasehold estates	506,638·07	2,860,150·14	480,699·13	1,923,042·07

The gross receipts of the railroad company for the month of June were $1,343,014, against $1,498,658 for the same month last year, a decrease of $155,644; the total for the year to June 30th, including the receipts of the Reading Coal and Iron Company, was $12,808,708, against $10,856,629 to corresponding time last year, an increase of $1,952,079. The coal tonnage of the year up to the end of June was 4,237,715 against 2,958,661 for the same time last year, an increase of 1,276,054; the tonnage of merchandise for the same time was 2,290,159, against 1,825,625 in same time in 1878, an increase of 464,534 tons. The number of passengers carried for the year to June 30th was 3,905,019, against 3,568,306 in corresponding time last year. The increase all through the exhibit is quite encouraging.

STATISTICS OF COAL PRODUCTION.

This is the only Report published that gives full and accurate returns of the production of our Anthracite mines.

Comparative statement for the week ending July 26th, and years from January 1st:

TONS OF 2240 LBS.	1879.		1878.	
	Week.	Year.	Week.	Year.
Wyoming Region.				
D. & H. Canal Co.	84,497	1,781,947	46,538	1,072,885
D. L. & W. RR. Co.	81,919	1,983,191	52,683	1,070,631
Penn. Coal Co.	33,566	783,819	21,128	421,243
L. V. RR. Co.	15,452	536,857	13,888	434,637
P. & N. Y. RR. Co.	1,533	17,524	791	15,964
C. RR. of N. J.	43,299	1,006,554	30,801	479,065
Penn. Canal Co.	*	182,920	16,948	153,609
	260,266	6,292,812	182,777	3,648,034
Lehigh Region.				
L. V. RR. Co.	70,985	1,770,088	43,693	1,282,306
C. RR. of N. J.	38,409	1,133,839	41,403	678,140
S. H. & W. B. RR.		13,435	906	15,630
	109,394	2,917,362	86,002	1,976,076
Schuylkill Region.				
P. & R. RR. Co	153,794	3,997,337	184,976	2,476,255
Shamokin & Lykens Val.	28,746	662,573	15,267	380,065
	182,540	4,659,910	200,243	2,856,320
Sullivan Region.				
Sul. & Erie RR. Co.	393	28,578	896	18,007
Total	552,593	13,898,662	469,918	8,498,437
Increase	82,675	5,400,225		
Decrease				

* This report was not received this week.

The above table does not include the amount of coal consumed and sold at the mines, which is about five per cent of the whole production.

Perth Amboy Business:

	Tons.
Received for the week	36,109
Shipped for the week	29,297
On hand July 26th	128,742

Belvidere Delaware Railroad Report for week ending July 26th:

	Week.	Year. 1879.	Year 1878.
Coal for shipment at Coal Port (Trenton)	94	6,258	2,530
Coal for shipment at South Amboy	6,572	267,721	280,185
Coal for distribution	4,445	179,907	94,148
Coal for Company's use	3,587	51,010	45,847

Statement of Coal Business at Fair Haven for the week ending July 26th:

	Tons.
Receipts	
Shipments	
On hand July 19th	34,900

Receipts and shipments of coal at Chicago, Ill., for the week ending July 26th, and year from January 1st:

	Week. Tons.	Year. Tons.
Receipts	52,391	1,187,568
Shipments	8,767	233,744

The increase of shipments of Cumberland Coal over the Cumberland Branch, and Cumberland and Pennsylvania railroads, amounts to 67,487 tons, as compared with the corresponding period in 1878.

Coals Cleared on the Canals of the State of New York from July 15th to July 22d, inclusive:

Tons of 2000 lbs.	1879.	1878.
Anthracite	34,408	31,071
Bituminous	8,902	8,268
Totals	43,310	39,339

The Production of Bituminous Coal for the week ending July 26th was as follows:

Tons of 2000 lbs., unless otherwise designated.

	Week. Tons.	Year. Tons.
Cumberland Region, Md.		
Tons of 2240 lb	48,105	873,562
Barclay Region, Pa.		
Barclay R. R., tons of 2,240 lbs	5,447	190,151
Broad Top Region, Pa.		
Huntingdon and Broad Top R. R.	2,371	78,357
*East Broad Top	1,120	33,861
Clearfield Region, Pa.		
*Snow Shoe	1,737	23,363
*Tyrone and Clearfield	36,978	706,222
Alleghany Region, Pa.		
*Pennsylvania R. R	4,796	91,042
Pittsburg Region, Pa.		
*West Penn R. R.	4,107	97,702
*Southwest Penn. R. R.	746	19,397
* Penn & Westmoreland gas coal, Pa. R. R.	15,156	374,454
*Pennsylvania R. R.	6,454	221,488

*For the nine days ending June 30th.

The Production of Coke for the nine days ending June 30th:

Tons of 2000 lbs.	Week	Year.
Penn. R. R. (Allegheny Region)	1,223	23,602
West Penn. R. R.	2,241	48,430
Southwest Penn. R. R.	27,065	451,794
Penn. & Westmoreland Region, Pa. R. R.	787	53,807
Pittsburg, Penn. R. R.	4,273	79,638
Total	36,189	657,271

PRICES OF COAL.

Chicago. July 30, 1879.

The following are the correct quotations of coal to-day, at which sales are being made:

	By Car-load on Track.
Lackawanna stove	$4.25@4 50
" chestnut	4.25@4.50
" egg	4.25@4.50
" grate	4.25@4.50
Erie & Briar Hill	4.75@5.00
Piedmont	4.50@5.00
Clearfield	4.50@5.00
Wilmington & Ill	2.50@3.00
Baltimore & Ohio	4.25@4.50
Indiana Block	4.00@4.25
Blossburg	4.50@5.00

The receipts of coal by rail and lake for the first half of 1879 will soon be ready for publication.

RENO & LITTLE.

P. S.—The car prices for anthracite are our selling prices. They are lower.

[Specially reported by Messrs. WILLIAM E. COX & Co.]

Wholesale, per ton of 2000 lbs.

Anthracite (prepared) on track		$3.85@$4.10
Lehigh (lump)	"	5.50@ 6.00
Blossburg	"	3.85@
Cumberland	"	4.50@
Brier Hill and Erie	"	3.80@ 4.10
Pittsburg	"	3.50@ 3.85
Coke (Connellsville)	"	5.75@ 5.85

Retail, per ton of 2000 lbs.

Anthracite (for family use)	$4.50
Lehigh (lump)	6.50
Blossburg	5.00
Cumberland	6.00
Brier Hill and Erie	5.00

Buffalo. July 30, 1879.

[Specially reported by E. L. HEDSTROM.]

Retail prices, screened and delivered, per ton of 2000 lbs

Grate.	Egg.	Stove.	Chestnut.
$3.50	$3.50	$3.75	$3.75

The wholesale prices are nominally at $2.95 per ton of 2000 lbs. for all sizes.

[Specially reported by C. M. UNDERHILL.] July 29.

	DELIVERED AT			
	Elmira.	Rochester.	Oswego.	Sodus Pt.
	Afloat.	Afloat.	F. O. B.	F. O. B.
Grate	$3.00	$2.58	$2.68	$2.68
Egg	3.00	2.58	2.68	2.68
Stove	3.00	2.58	2.90	2.90
Nut	3.00	2.75	2.68	2.68

	DELIVERED AT				
	Charlotte	Erie.	Buffalo.		
	F. O. B.	F.O.B.	Afloat.	F.O.B.	Ret. Del.
Grate	$2.68	$2.88	$2.68	$2.88	$3.50
Egg	2.68	2.88	2.68	2.88	3.50
Stove	2.90	3.13	2.95	3.13	3.75
Nut	2.68	3.04	2.85	3.04	3.75

Hamilton, Ont. July 28, 1879.

[Specially reported by H. BARNARD.]

Retail prices delivered per ton of 2000 lbs.

Pennsylvania Coal Co.'s Pittston Coal.

Grate	$4.50	No. 1 Brier Hill	$5.50
Egg	4.50	No. 2 Brier Hill	5.00
Stove	4.50	Reynoldsville steam	4.50
Chestnut	4.50	Blossburg	5.00
Pea	4.25	Lehigh Lump	6.00

25 cents per ton less in cars at Great Western Railway Depot. Terms: Strict cash with order, or C. O. D., 3 per cent off these prices.

Indianapolis. July 30, 1879.

[Specially reported by Messrs. Cobb & Branham.]

WHOLESALE BITUMINOUS.

On board cars, per ton of 2000 lbs.

White River	$2.50	Sand Creek	$2.50
Brazil Block	2.25	Raymond City	3.40
Highland Grate	1.85	Youghiogheny	4.00
Indiana Cannel	3.25	Blossburg (smithing)	4.50
Peytona	5.70		

Per car, 12 tons.

Block coal, nut	$16.00	Block Slack	$13.00
Highland, "	15.00		

RETAIL BITUMINOUS.

Delivered per bushel of 70 lbs.

White River	12c.	Block Nut, steam use	6c.
Brazil Block	12	" Slack, "	5
Highland Grate	10	Virginia Cannel	24
Block Nut, domestic use	11	Indiana Cannel	16
Highland Nut, " "	10	Youghiogheny	16
Sand Creek	12	Blossburg	24

GAS COKE.

Per bushel, measure containing 2888 cubic inches.

Retail, crushed	12c.	Wholesale, lump	8c.
" lump	10	" crushed	10

ANTHRACITE.

Per ton of 2000 lbs.

Wholesale on Cars.		*Retail delivered.*	
Wilkes-Barre, all sizes	$4.50	Wilkes-Barre, all sizes	$5.50
Lackawanna, "	4.50	Lackawanna, "	5.50
Lehigh "	5.50	Lehigh, "	6.50

Milwaukee. July 28, 1879.

Specially reported by Messrs. R. P. Elmore & Co.]

Coal is moving slowly.

Retail price per ton of 2000 lbs.

Lehigh prepared, chippings	$6.00@
" " lump	6.00 @
Lackawanna prepared (all sizes)	5.00@
Briar Hill	5.20 @
Steam coals	2.75@ 4.00

Montreal. July 30, 1879.

[Specially reported by Messrs. Robert C. Adams & Co.]

Prices of Anthracite per ton of 2000 lbs. delivered in lots under five tons

Stove	$5.25	Chestnut	$5.00
Egg	5.00		

For lots of five tons (2000 lbs.) and over.

Stove	$5.00	Chestnut	$4.75
Egg	4.75		

Bituminous, to arrive, per ton of 2240 lbs. ex ship.

Scotch Steam	$3.75@$3.90	Cape Breton	$3.00@$3.25
Pictou	3.50@ 3.75		

New Orleans. July 26, 1879.

[Specially reported by Messrs. C. A. Miltenberger & Co.

PITTSBURG COAL.

At wholesale (by boat-load)	50c. per bbl. of 180 lbs.		
To steamboats	65c.	"	"
" manufactories	60c.	"	"
" families	70c.	"	"

In hhds. (for shipment) $6.00 per hhd from 5 to 6 bbls.

ANTHRACITE COAL

Per ton of 2000 lbs.

At wholesale	$6.00 to $7.00
To families, etc	8 00 to 9.00

ST. BERNARD (KY.) COAL.

To steamboats	55c.	per bbl. of 180 lbs.	
" families	60c.	"	"

Richmond. July 31, 1879.

[Specially reported by S. H. Hawes, Dealer in Coal.]

Per ton of 2240 lbs. f.o.b.

Kanawha Cannel	$7.50	New River Bituminous	$2.60
Coalburg Splint	3.60	Clover Hill Coal	2.00
Lewiston "	3.60	Norwood Gas and	
Kanawha Gas Coal	3.30	Steam Coal	2.70

Sandusky. July 29, 1879.

[Specially reported by Messrs. Black & Clarke.]

Per ton of 2000 lbs.

ANTHRACITE ON BOARD CARS.

	Grate.	Egg.	Stove.	Chest
Lehigh	$3.50	$3 50	$3.50	$3.50
Wilkes-Barre	3.50	3.50	3.50	3.50
Pittston	3.50	3.50	3.50	3.50

Prices retailed, delivered, 25c. above car prices.

	On cars.	Retail delivered.
Massillon	$2.60	$3.25
Straitsville	2.35	3.00
Shawnee	2.25	3.00
Piedmont	3.80	4.50

St. Louis. July 28, 1879.

[Specially reported by Messrs. Lewis P. Harvey & Co.]

Retail prices, delivered. Ton of 2000 lbs.

	Per ton.		Per ton.
Lackawanna	$5.50@$6.00	Lehigh Lump	$6.50@$7 00
Wilkes-Barre	5.50@ 6.00	Connells. Coke	6.00@ 6.50
Schuylkill	5.50@ 6.00	Blossburg	6.50@ 6.75

BITUMINOUS.

Big Muddy	$3.25@	Pittsburg	$5.75
Indiana Block	3.50@	Piedmont	7.25
Illinois Coals	2.25@$2.50	Peytona	7.50
Cumberland	6.25@	Lehigh Val. Ant.	7.50@8.00

[Specially reported by J. J. Sylvester.]

Anth'c'te Wilkes-Barre	$5.25	Indiana Block	$3.50
" Lehigh	5.75	Blossburg	5.50
Connellsville Coke	7.00	Piedmont	5.00
Big Muddy	3.25		

Toledo. July 29, 1879.

[Specially reported by Messrs. Gosline & Barbour.]

We quote Anthracite, Lackawanna :

Ton of 2000 lbs.

	Grate.	Egg.	Stove.	Chest.
On cars	$3.75	$3.75	$3.90	$3.75
Retail delivered	4.50	4.50	4.75	4.50

BITUMINOUS—WHOLESOLE ON CARS AT TOLEDO.

Ton of 2000 lbs.

Straitsville lump	$2.25	Massillon nut	$2.25
" nut	1.90	Willow Bank lump	2.75
Shawnee lump	2.50	" nut	2.25
" nut	2.10	Cumberland	4.00
Hocking Valley lump	2.50	Morris Run	4.00
" nut	2.10	Fall Brook	4.00
Massillon lump	2.75		

We quote Hocking Valley and Straitsville : Lump, $2.35 ; nut, $2.

FREIGHTS.

Coastwise Freights.

Per ton of 2240 lbs.

Representing the latest actual charters to July 31st, 1879.

Ports.	From Philadelphia.	From Baltimore.	From Elizabethport, Port Johnson, South Amboy, Hoboken and Weehawken.
Alexandria	75		
Annapolis, Md			
Apponaug			
Augusta, Me			
Baltimore	55@60‖		
Bangor			1.10
Bath, Me	1.25@1.10†		1.10
Beverly			1.00
Boston, Mass	1.20@1.25		1.00
Bridgeport, Conn			
Bristol			
Brooklyn			
Cambridge, Mass			1.00
Cambridgeport			1.00
Charleston			
Charlestown			
Danversport			
East Cambridge			1.00
E.Gr'nwich,R. I			
Fall River	1.10		80
Fredericksburg			
Gloucester	1.25		
Hartford			
Hingham			1.00†
Hyannis			
Key West			
Lynn	1.25		
Marbleh'd, Mass			
Medford	1.65		
Milton	1.25		
Nantucket			
Newbern, N. C			
New Bedford	1.10@1.15		
New Brunswick			
New Castle, Del			
Newburyport			1.15
New Haven	85		
New London			70
Newport	1.15		80
New York	80@85‖		
Newark			
Norfolk, Va	60@70		
Norwich			75
Norwalk, Conn			
Pawtucket	1.25		
Petersburg			
Plymouth			
Portland	1.25@1.05†		1.00
Portsmouth, Va			
Portsmouth, N.H.	1.30		1.10
Providence	1.10		80
Provincetown			
Quincy Point			1.00
Richmond, Va	75		
Rockland			
Rockport			
Saco			1.30
Sag Harbor			
Salem, Mass	1.25@1.40		1.00
Saugus			
Savannah	1.20		
Somerset			
St. John, N. B			
Stamford			
Thomaston			
Trenton			
Troy			
Wareham			
Washington	75@80		
Weymouth	1.25‡		
W'lmington, Del			

* And discharging and towing. † And discharging. ‡ And towing. § 3 cents per bridge extra. ‖ Alongside. ¶ And towing up and down.

Ocean Freights.

Ocean Freights on coal, iron, etc., per ton of 2000 lbs. to and from foreign and domestic ports, for two weeks ending July 29th, 1879, are given below.

Date.	From	To	Cargo.	R'te
July 15	New York	Galveston	RR. iron	4.50
" 18	Cow Bay	New York	Coal	1.40
" 18	Philadelphia	Nuevitas	Coal	2.00
" 22	Barren Island	Baltimore	†	§
" 22	Charleston	Orient, L. I	‡	2.75
" 22	New York	Richmond	Old rails	1.00
" 22	New York	Richmond	Salt*	.10
" 25	New York	Galveston	RR. iron	4.50
" 29	Boston	San Francisco	Iron	‖
" 29	Boston	San Francisco	Ca'tings	$12
" 29	Morant City	Baltimore	Guano	3.00
" 29	New York	Georgetown	Guano	1.25
" 29	New York	Providence	Nails	¶

* Salt per sack of 225 lbs. † Phosphates. ‡ Phosphate rock. § $1 and loading and discharging. ‖ $8@$10. ¶ 5 cents per keg.

PRICES OF IRON.

Baltimore. July 28, 1879.

[Specially reported by Messrs. R. C. Hoffman & Co.]

The iron market continues active and prices firm. We quote :

Balt. Char	$26.00@$29.00	M. & White	$15.00@$16.00
Va. "	27.00@ 30.00	C'lC.B.Blooms	49.00@ 51.00
Anth.No.1	19.00@ 21.00	" " Billetts	52.00@ 55.00
" " 2	18.00@ 19.00	Refi'd Blooms	45.00@ 47.00
" " 3	17.00@ 18.00		

Buffalo. July 29, 1879.

[Specially reported by Messrs. Palen & Burns.]

	4 mos.
No. 1 Ex. Foundry	$20.00
No. 2 "	19.00
No. 3 Forge	18.00
American Scotch A 1	20.50
" " B 1	18.50
" " No. 2	18.50
" " No. 3	
Best selected Connellsville coke, per net ton	4.85
" " Lehigh coal, " "	4.00
Old Car Wheels	$19.50 cash.

Prices per gross tons delivered on cars at Buffalo.

Chicago. July 28, 1879.

[Specially reported by Messrs. William E. Cox & Co.]

The usual time, four months, is allowed on the quotations below :

Lake Superior Charcoal, Nos. 1 and 2	$23.00@
" " " Car Wheel & Mal.	23.00@ 24 00
Pennsylvania Anthracite	20.00@ 21.00
American Scotch (Black Band)	21.00@ 21.50
Ohio, No. 1 Foundry	19.00@ 20.00
" Silver Gray	18 50@ 19.50
Southern (Coke and Steam Coal)	20.00@ 20.50
Old Car Wheels	21.00@ 21.50

Old rails in good inquiry, but none offering.

Cincinnati. July 29, 1879.

[Specially reported by Messrs. Traber & Aubery, Commission Merchants for the sale of pig iron, blooms, ore, etc.]

Below please find closing quotations of our pig-iron market, namely :

CHARCOAL.

H'n'g Rock	No. 1 Foundry & B 1	$21.00@$22.00	—4 mos.
"	No. 2 "	20.00@ 21.00	—4 mos.
"	Soft Silver Gray	@	—4 mos.
"	Mill	18.50@ 19.00	—4 mos.
Tennessee	No. 1 Foundry	20.00@	—4 mos.
"	No. 2 "	19.00@	—4 mos.
"	Mill	18.00@	—4 mos.

STONE COAL.

Ohio	No. 1 Foundry	$17.50@ 18.00	—4 mos.
"	No. 2 "	16.50@ 17.00	—4 mos.
"	No. 3 "	@	—4 mos.
"	No. 4 "	@	—4 mos.
"	Mill	17.00@	—4 mos.

COKE.

Ohio & W. Va.	No. 1 Foundry	18.50@ 19.50	—4 mos.
" "	No. 2 "	18.00@	—4 mos.
" "	Stove	@	—4 mos.
" "	Mill	17.00@	—4 mos.

CAR-WHEEL

H'n'g R., C. B	Jefferson, Chesapeake.	$30.00@	—4 mos.
Maryland,	Cedar Point	31.00@	—4 mos.
Missouri,	Maramec	28.00@	—4 mos.

BLOOMS.

Charcoal	$45.00@$50.00– cash.

SCRAP IRON.

Cast	40c.	@	45c.—cash
Wrought	62½c.	@	$1.00—cash

Columbus, O. July 29, 1879.

[Specially reported by Messrs. King, Gilbert & Warner, Dealers in Pig Iron and Ores.]

FOUNDRY IRONS

No. 1	Hanging Rock Charcoal	$22.00@	$22.50
No. 2	" " "	21.00@	21.50
No. 1	Hocking Valley soft and strong	19 25@	20.25
No. 2	Hocking Valley soft and strong	17.75@	18.50
No. 1	American Scotch	19.25@	20.25
No. 1	Shawnee	18.50@	19.00
No. 1	Jackson County	18.50@	19.00
No. 2	" "	17.50@	18.00
No. 1	Silver Gray	17.75@	18.25
No. 2	" "	16.75@	17.25

MILL IRONS.

Gray neutral	17.25@ 17.50
Mottled and white neutral	16.50@ 16.75
Gray cold short	16.75@ 17.00
Mottled and white cold short	16.25@ 16.50

Louisville. July 29, 1879.

[Specially reported by Messrs. George H. Hull & Co.]

We revise our quotations, on which the usual time, four months, is allowed :

FOUNDRY IRONS.

	No. 1.	No. 2.
Hanging Rock Charcoal	$21.50@$22.50	$19.50@$20.00
Southern Charcoal	19.00@ 19.50	18.50@ 19.00
H'n'g Rock, Ste'l & Coke	19.00@ 19.50	18.50@ 19.00
Southern Stonecoal & Coke	19.00@ 19.50	18.00@ 18.50
"Amer. Scotch"	$18.50@$19	Silver Gray. $16.50@$17.50

MILL IRONS.

No. 1 Charcoal, Cold-short & Neutral	$17.00@$18.50
No. 1 Ste'l & Coke, Cold-short & Neutral	17.00@ 17.50
No. 2 Ste'l & Coke, Cold-short & Neutral	16.50@ 17.00
No. 1 Missouri and Indiana, Red-short	20.50@ 21.00
White & Mottled, Cold-short & Neutral	16.00@ 16.50

CAR-WHEEL AND MALLEABLE IRONS.

Hanging Rock, Cold Blast	$28.00@$32.00
Alabama and Georgia, Cold Blast	28.00@ 30.00
Kentucky, Cold Blast	27.00@ 30.00

Milwaukee. June 29, 1879.

[Specially reported by Messrs. R. P. ELMORE & Co.]

Below please find present quotations of pig-iron in this market, namely:

CHARCOAL IRONS.

No. 1 Lake Superior per gross ton..$24.00@ .....4 mos.
" 2 " " " " " 22.00@ .....4 mos.

ANTHRACITE IRONS.

No. 1 E. & L. S. ores per gross ton..$23.00@ .....4 mos.
" 2 " " " " ..... 22.00@ .....4 mos

STONE COAL AND COKE.

Hubbard Am Sc'th (Bk. Bd., p. ton..$23.00@ .....4 mos.
Milton Silver Gray Hanging Rock.. 19.00@$21.00—4 mos.

CAR WHEEL.

Lake Superior ores gross tons.. ... $24.00@25.00—4 mos.
$1 per ton off for cash.

Pittsburg. July 29, 1879.

[Specially reported by H.A. CHILDS.]

	4 mos.		4 mos.
No. 1 F'dry	$19.00@$22.00	M. & White	$15.50@$17.00
No. 2 "	18.00@ 19.00	Hot Blast Ch.	22.00@ 24.00
Gray Forge	17.50@ 21.00	Cold Blast W.	.....@ 35.00

Richmond, Va. July 26, 1879.

[Specially reported by ASA SNYDER, Esq.]

Amer. Scotch Pig Iron			$22.50@
Anthracite	"	No. 1	20.50@$21.50
"	"	No. 2	18.50@ 19.50
"	"	No. 3	17.50@ 18.50
"	"	Mottled	16.00@ 17.00
Coke	"	No. 1	19.00@ 20.00
"	"	No. 2	18.00@ 19.00
Va. Cold Blast Charcoal Pig Iron, cold short			22.00@ 23.00
" " " " " "		neutral	27.50@ 28.50
" Warm "	"	" red short	17 00@ 18 00
Old Rails			21.00@ 22.00
Wrought scrap No. 1			17.50@ 18.50
Cast scrap—Machinery			16.00@ 17.00
Richmond Refined Bar Iron			2.20@ 2.25
Horse-shoes			4.00@ .....
Mule-shoes			5.00@ .. ..
Old Dominion nails (standard size)			2.25 keg.
Freight by sail to Philadelphia			$1.65 for 2240 lbs.
" " "		New York	1.85 " "

St. Louis. July 29, 1879.

[Specially reported by CARD & HOFFER.]

We quote:

Missouri	$19.50@20.00
Southern	18.50@19.50
Hanging Rock	21.00@22.00
Missouri	None offering.
Southern, No. 1	18.50@19.50
Ohio River, No. 1	19.00@21.00
Jackson County, No. 1	19.00@20.00
Hocking Valley, No. 1	19.00@20.00
Anthracite	20.50@21.00
No. 2 and mill, $1 to $2 per ton less.	
Missouri	25.00@30.00
Southern	25.00@30.00
Ohio	30.00@32.00

IRON ORE.

Iron Mountain	5.50
Southwest	4.75
Ore for flux	6.50
Rails	20.00@20.50
Wheels	20.00

METALS.

NEW YORK, Friday Evening, August 1, 1879.

The past seven days have been very quiet ones, so far as large transactions are concerned, yet there is still a very large jobbing business doing, and prices are well maintained, under the belief that a very active fall business is to come.

RECEIPTS OF METALS AT NEW YORK FOR THE WEEK ENDING JULY 31ST AND YEARS FROM JANUARY 1ST, 1878 AND 1879.

	1879.		1878.	
	Week.	Year.	Week.	Year.
Copper, bbls.	729	9,567	626	13,261
Copper, boxes.	.....	113	.....	.....
Copper, cakes	868	16,611	659	10,198
Lead, pigs	2,087	110,240	6,423	196,934
Spelter, pieces	44	61,438	769	29,300
Quicksil'r, flasks	250	4,875	.....	783

Copper.—We learn of no business worthy of note, and continue to quote at 16½@16¾c. The next thirty days should show up some important contracts. In fact, there is already talk of "something going on." London advices of July 10th say:

"We hear of nothing in Chili bars, except a sale of 25 tons good-named brand at £54, cash; the market, however, was decidedly stronger, and at £53¾ for G. O. B.'s, £54¼ for favorite marks, a fair business would have been done if holders had cared to accept those rates. We call G. O. B.'s £53¾@£54; named brands, £54@£54¼; favorite marks, £54¼@£54½, and rather buyers at the lowest. Best sorts are quoted widely, £54½@£55½, but we doubt whether any thing could be obtained below £55. Of Wallaroo cake there are buyers at £60, and small lots on sale at £60½@£61. Burra has been disposed of in trifling quantities at £60, but there are no further sellers thus. English is also a shade firmer; Tough Cake, £58½@£59; Select, £59½@£60½; India Sheets, £63½@£64; other sheets, £64½@£65."

Tin.—There is a very good jobbing demand, but no large transactions. Yesterday's cable advices quoted Straits at London at £65, at Singapore at $20, with exchange at 3s. 9d. We quote Straits at 14¾c.; L. & F. at 14c.; and Banca, 17½@17¾c.

Tin Plates.—There has been a very good out-of-town business. We quote per box as follows: Charcoal, bright, Melyn grade, ⅛ X, at $6.37½@$6.25, and Allaway grade, $6@$5.75; charcoal ternes, Allaway grade, $5.50@$5.62½; coke, bright B. V. grade, $5; and coke roofing, 14 × 20, $5.

Lead.—There has been no business worthy of note. The asking price is 4·10c., and 4c. is bid. The stock is held in strong hands, and prices are remarkably firm.

Spelter and Zinc.—The stocks of both of these articles are small and well concentrated, giving a very firm tone to the markets. Spelter is held at 4¾c., and sheet zinc at 6½c.

Antimony is dull. We quote Hallett's at 11⅝@11½c., and Cookson's at 11¾@11⅞c.

THE BULLION MARKET.

NEW YORK, Friday Evening, August 1, 1879.

The market has weakened materially since our last report under an absence of all demand in London from the East Indies, and with continued heavy receipts from Mexico and America. Until there is more of an outlet, there can not be much improvement.

DAILY RANGE OF SILVER IN LONDON AND NEW YORK, PER OZ.

DATE.	London	N. Y.	DATE.	London	N. Y.
	Pence.	Cents.		Pence.	Cents.
July 26	51⅛	112¼	July 30	51⅛	111¼
July 28	51⅜	112	July 31	51⅛	111¼
July 29	51¼-⅛	111½-¼	Aug. 1	51⅛	111⅛

We give below a statement showing the latest bullion shipments, in addition to those announced in our issue of July 26th, 1879:

July	13th—Bodie	$11,700
"	13th—Tiger	17,000
"	14th—Belle Isle	39,000
"	14th—Independence	19,300
"	14th—Tip Top	30,200
"	14th—Alexander	5,700
"	14th—Star	5,200
"	14th—Florida Hill	2,070
"	16th—Sierra Nevada	34,293
"	16th—Northern Belle	2,587
"	16th—Martin White	7,765
"	18th—Belle Isle	33,700
"	18th—Independence	12,000
"	19th—Con. Virginia	54,579
"	20th—Bodie	10,60
"	21st—Hillside	4,200
"	21st—Belle Isle	33,700
"	21st—Independence	12,600

The Output of the Bonanza Mines for 1879.—Annexed is a statement of the half-yearly bullion yield of the bonanza mines:

Consolidated Virginia.

	Gold.	Silver.	Total.
January	$65,500	$74,200	$139,700
February	131,000	165,100	296,100
March	193,600	244,800	438,400
April	132,800	207,300	340,100
May	83,000	70,300	153,300
June	66,300	60,700	127,000
Totals	$672,200	$822,400	$1,494,600

California.

The product of the California mine for the same period was as follows:

	Gold.	Silver.	Total.
January	$174,900	$150,900	$325,800
February	83,300	82,600	165 900
March	214,400	246,900	461,300
April	249,400	237,700	487,100
May	131,900	98,300	230,200
June	92,400	93,600	186,000
Totals	$946,300	$910,000	$1,856,300
Con. Virginia	672,200	822,400	1,494,600
Totals	$1,618,500	$1,732,400	$3,350,900

The Gold Hill *News* gives the following interesting statement showing the record of ore produced, bullion produced, and dividends:

Year.	Tons.	Av.	Product.	Dividends.
1868	2,800	$7.89	$22,832	None.
1869	18,000	8.66	155,880	$45,000
1870	19,165	11.49	220,287	37,500
1871	18,628	7.92	148,064	20,500
1872	18,380	7.39	135,728	None.
1873	20,731	6.37	132,056	None.
1874	13,636	5.05	68,861	None.
Totals	111,497	$7.89	$883,108	$102,500

A recent clean-up at the Yuma (Arizona) mill showed a result of $19 per ton. It is said that the ore milled was easily worked.

The present weekly output of the Bonanza mines is as under: The California extracted 873 tons of ore for the week ending July 19th, against 675 the previous week. The Consolidated Virginia extracted 1314 tons of ore for the week ending July 19th, against 794 the previous week.

The California Mining Company.—This company shipped bullion of the value of $48,075, on the 23d inst.

A recent run of 144 tons of ore from the Volcano mine of Amador County, Cal., gave a yield of $6300—equal to over $45 to the ton. The output of this section during May and June, 1879, will go considerably over $43,000.

The Belle Isle Mining Company yielded over $160,600 for June, and it has a balance of $102,000 in the treasury at present.

On the 19th July, the Northern Belle Mining Company shipped bullion to the amount of $4361.

The Ram's Horn mine, of Poverty Flat, Idaho, one of the Salmon River mines, will ship $100,000 worth of ore during the present season.

The Dardanelles Consolidated Gravel Mining Company, of Forest Hill, Placer County, Cal., produced $45,304 in gold from January 13th to July 21st.

The Silver King Mining Company shipped 10,000 pounds of concentration to San Francisco on July 16th.

The bullion shipments from Boulder, Colo., for the week ended July 12th, amounted to $11,000.

The total yield of the Bodie mill for the last fiscal month was, in round numbers, $132,000, nearly all gold.

A single mine in the Georgetown District, New Mexico, turned out, from 32 tons of ore, 5300 ounces of gold, which is equal to about $95,000. The authority for the above is the Grand County *Herald* of July 14th, 1879.

The Typo Consolidated Mining Company is shipping bullion at the rate of 63,000 pounds per day.

The monthly product of the Golden Colorado Smelting Works is about $40,000.

On July 17th, the Alexander Mining Company of Grantsville, Nev., shipped bullion to the value of nearly $7000.

New York Assay Office Monthly Statement.—The following is a statement of business at the United States Assay Office, at New York, for the month ending July 31st, 1879:

Deposits of gold			$1,216,000
" " silver			64,000
United States bullion, Colorado		$60,000	
" " "	Lake Superior	15,000	
" " "	Montana	140,000	
" " "	New Mexico	57,000	
" " "	Utah	66,000	
" " "	Arizona	2,000	
			340,000
Total deposits			$1,620,000
Silver bars stamped			60,633
Transmitted to Mint of the United States at Philadelphia for coinage, gold			436,607

Standard Dollars.—WASHINGTON, July 30.—Coinage of standard silver dollars will this month fall between $500,000 and $700,000 short of the minimum amount fixed by law. The $2,000,000 monthly deficiency will be due to the fact that on the first of July the stock of silver bullion at the San Francisco and Carson City mints had been so much reduced that there was nothing to commence work upon. Since then it has been impossible to procure bullion for those mints. Up to the 30th of June, work was pushed forward continually at the Philadelphia and New Orleans mints, so as to run the coinage up to the $2,000,000 required for that month. The Mint at Philadelphia will run night and day during August to make up the deficiency.

Exports of Gold and Silver from New York.

Week ending July 26th	$107,100
Corresponding week last year	255,146
Since January 1st, this year	11,380,878
Corresponding period last year	8,840,449

Gold Interest Paid Out by the Treasury.

Week ending July 26th	$462,948
Corresponding week last year	514,956
Since January 1st, this year	39,264,334
Corresponding period last year	43,733,608

Prospective Re-opening of the Carson Mint.—A telegram from Washington announces that the Mint at Carson City has been re-opened, and coinage will be recommenced as soon as the necessary bullion can be procured at market rates. The New Orleans Mint is running at its full capacity, with plenty of bullion on hand. Much of the bullion purchased there has been in the form of Mexican dollars. The Treasury is making arrangements to avoid the necessity of running the Philadelphia Mint night and day during August, to make up the deficiency in their coinage of the standard silver dollar for the month of July.

The coinage executed at the U. S. Mint in Philadelphia during July aggregated 1,611,000 pieces, of the total value of $806,110. Of this amount, $800,000 were silver dollars, and $8110 cents.

The French Mint is now coining a special or trade-dollar for circulation in Cochin China. It weighs 27 grams, while the five-franc piece only weighs 25 grams. Its value is 5f. 44c.

FINANCIAL.

Coal Stocks.

NEW YORK, Friday Evening, August 1, 1879.

The week under review has been an active one for the coal stocks, and under the influence of a "bolstered" auction sale of coal, and false impressions created as to the immediate prospects of the coal trade, prices have been made to advance. At the present time, and, in fact, during the whole year, all of the companies have been losing money, so that there will be a still greater deficiency to be made up before dividends can be resumed. Therefore, as bright prospects may be painted as possible, and still it will be a long time before dividends can be expected, and it becomes a question whether some of the companies will ever be able to more than pay interest on their vast indebtedness. Under the circumstances, therefore, the speculation in these stocks appears to us to be of the wildest kind, as much so even as speculating in the mines of the Comstock lode.

Delaware & Hudson sold as low as 48 early in the week, but reached 50¾ yesterday, closing at 49¼ today, the sales amounting to 20,995 shares.

Delaware, Lackawanna & Western records 150,700 shares at 59⅝@62¾, closing at 62. New Jersey Central has been fairly active, the sales amounting to 39,355 shares at 52@55, closing at 54½. The sales of Morris & Essex have aggregated 4374 shares at 91⅞@93¾.

The Philadelphia market has shown great activity in the coal shares. Reading has received first attention, the sales amounting to 34,471 shares at 19⅞@21. The sales of Pennsylvania Railroad amount to 20,180 shares at 39⅞@40½. Lehigh Valley RR. has been unusually active for that stock, the sales amounting

COAL STOCKS.

NAME OF COMPANY.	Capital Stock.	SHARES. No.	SHARES. Par Val.	Last Dividend. Mo.	Last Dividend. Y.	Last Dividend. A't.	Rate per Ann.	Quotations of New York stocks are based on the equivalent of $100. Philadelphia prices are quoted, so much per share. July 26. H.	July 26. L.	July 28. H.	July 28. L.	July 29. H.	July 29. L.	July 30. H.	July 30. L.	July 31. H.	July 31. L.	Aug. 1. H.	Aug. 1. L.	SALES.
	$		$				Per c'nt													
Ches. & O. RR	15,906,138	.....	100	.....	..	.....	.....	.....	.....	7½	.....	7¼	6⅞	7	6⅜	7¾	6½	.....	.....	3,150
Consol. Coal.	10,250,000	102,500	100	Jan.	77		2½	.....												
Del. & H. C.	29,000,000	290,000	100	Aug	76		4	48½	48	48¾	48	49¾	48	50	49¼	50¾	49½	50	49	20,995
D., L.&W. RR	26,930,000	524,000	50	July	76		2½	59¾	59⅜	59⅝	59⅛	59¾	62½	61¼	62¾	62¾	61⅝	62⅜	61⅜	150,700
Lehigh C.& N	10,148,550	208,971	50	Nov	76		1½	5½	24½	.....	.....	24⅜	24⅛	24⅝	24⅜	25	24¾	25	24¼	2,216
Leh. V'y R. R	27,228,855	540,858	50	J'ne	79		1	4	42	42	42	41⅜	41⅞	41⅜	41¾	42⅛	41⅞	42⅛	42¼	1,834
Mary'd Coal	4,400,000	44,000	100	Jan.	76		1½	1½	.....											
Morris & Es'x	15,000,000	300,000	50	.....	..	.....	.....	92	.....											
N. J. C. R. R.	20,000,000	206,000	100	Apr	76		2½	52¾	52	92½	91¾	93⅜	92	93¼	92¾	93¾	92½	93⅛	93¼	4,374
Penn. Coal...	5,000,000	100,000	50	May	76		4	9	.....	53	52¼	53⅝	52½	54	53⅜	55	54	54⅜	53⅛	39,355
Penn. R. R..	68,870,200	1,337,404	50	May	79		2	8	40	40¼	39⅞	40⅛	39⅞	40	40	40½	40	40¼	40¼	20,130
Ph. & R. R. R	34,278,175	685,563	50	Jan	76		4 2½	10	19¾	19¾	20	19¾	20⅛	19⅝	20⅜	20¼	21	20½	20¾	34,471

The Delaware & Hudson Canal Co. has paid in dividends to date $38,821,104, and the Philadelphia & Reading $43,012,197
Total Sales.....277,275.

to 1834 shares at 41½@42¼. Lehigh Coal and Navigation has been fairly active, the sales aggregating 2216 shares at 24¾@25.

Pennsylvania Salt Manufacturing Co.—600 shares of this company's stock were sold at auction during the week at $76 per share. This company has issued the following announcement under date of August 1st, 1879:

"To the holders of bonds of the Pennsylvania Salt Manufacturing Company: Notice is hereby given to the holders of said bonds, maturing January 15th, 1880, and May 1st, 1880, that the company is prepared to issue bonds, secured by first mortgage on their property, bearing interest at the rate of five per cent per annum, redeemable at the option of the company after five years, and payable in twenty years after date. All holders desirous of exchanging old bonds for the new issue must give written notice to the Treasurer before the first day of September next."

Coupons and Interest are due and payable on the bonds of the following companies during the present month:

United Companies dollar loan mortgage, $4620.

Catawissa RR., first-mortgage convertible sevens, $7067.

" " new " " " $45,500.

Huntingdon & Broad Top RR., second mortgage, $12,862.

Lehigh Navigation Co., first-mortgage railroad sixes, $60,000.

Schuylkill Navigation Co., preferred, $1.40 a share, scrip 6th, $88,915.20.

Schuylkill Navigation Co., common, 70c. a share, 6th, $12,293.14.

Delaware & Bound Brook RR. 1½ per cent dividend, $22,710.

North Pennsylvania RR., 1¼ per cent dividend, $66,632.59.

Morris Canal and Banking Co., preferred, 5 per cent dividend, 5th, $58,750.

Morris Canal and Banking Co., common, 2 per cent dividend, $20,850.

Morris Canal and Banking Co., preferred, dividend scrip, 5th, $3610.

Saltsburg Coal Co., 2 per cent dividend.

The Fulton Coal Company announces a dividend of 3 per cent, payable on the 4th inst.

The interest on the third mortgage 6 per cent bonds of the Belvidere & Delaware Railroad Company also matures on the 1st, and will be paid at the office of the Pennsylvania Railroad Company. Interest is also payable on the 6 per cent bonds of 1883 of the Camden & Amboy Railroad Company; on the 6 per cent bonds of the Burlington County Railroad.

COMPANY MEETINGS.

McMillen S. Mg. Co.	August 6th	Stockholders'	Meeting.
Sutro Mg. Co.	"	4th...Annual	"
Original Keystone	"	5th... "	"
South Comstock G. & S. Mg. Co.	"	18th...Stockholders'	"
South Comstock Con. Silver Mg. Co.	"	18th... "	"
Navajo Mining Co.	"	12th...Annual	"

Gas Stocks.

NEW YORK, Friday Evening, August 1, 1879.

We note a dull market for gas stocks, and but few changes have occurred in the quotations as compared with the prices ruling a week ago.

The following interesting comparisons are gathered from a recently-compiled tabular statement in possession of Col. J. Henly Smith, Chairman of the Finance Committee of San Francisco:

Cities.	Gas lamps.	Hours burning per lamp per an.	Total consump'n.	Total cost per lamp.	Total annual cost.
New York	20,913	3,833	240,457,400	$19.70	$477,226
Brooklyn	14,826	3,790	168,571,620	26.50	481,766
Philadelphia	11,986	3,750	224,739,500	22.00	378,860
Chicago	10,760	2,550	106,524,000	20.95	225,000
Boston	9,992	3,828	153,997,500	40.27	459,082
St. Louis	7,151	2,600	92,963,000	37.00	250,000
Cincinnati	5,845	2,500	58,450,000	21.00	131,000
San Francisco	5,255	2,160	45,403,000	56.86	291,863

Ground is being broken in Manayunk, near Philadelphia, Pa., for the establishment of the West Side Gas Company. The company proposes lighting a number of mills in its vicinity in competition with the Philadelphia Gas-Works. The mains are to be laid along the tow-path of the Schuylkill Navigation Company, because the new company has no right to lay mains in the street.

The following are the debts of three English cities, and the proportion due to establishment of gas-works:

	Total debt.	Spent on gas-works.
Bolton	£1,635,000	£454,790
Bradford	2,826,132	341,571
Leeds	3,331,056	895,959

The Gas and Water Committee of the Ramsgate (England) Local Board has decided upon letting gas cooking stoves on hire on the three-years' purchase system.

The Common Council of Plainfield, N. J., has suspended lighting the street lamps for three months.

Galveston (Tex.) gas is $4 a thousand.

The Fulton Municipal Gas Company, of Brooklyn, which promises to break down the monopoly held by the old gas companies for years by furnishing the city and private consumers with cheaper and better gas, is laying mains in the Third, Tenth, Eleventh, Twentieth, and Twenty-secondwards. Work is now being carried on in State street, Atlantic avenue, Fulton street, Lafayette avenue, Pacific street, Dean street, Elliott place, Fort Greene place, and Carlton avenue.

Suit has been brought in the Brooklyn City Court by Jesse W. Starr, against the Mutual Gas-Light Company and its trustees and the Fulton Mutual Gas-Light Company. The action is brought to set aside the conveyance of certain real-estate, held by the Mutual Company, to the Fulton Company, and for an injunction restraining the latter corporation from using the property in any way. The injunction was granted by Judge Reynolds. The defendants have not yet served their answer. The State of New York recently began a suit to set aside the charter of the Mutual Company because they have failed to fulfill the terms of their contract.

Interest and Dividends are due on the bonds and stock of the following companies during the present month:

Cambridge (Mass.) Gas Co.—5 per cent dividend on its $700,000 capital.

Charlestown (Mass.) Gas Co.—5 per cent dividend on its capital stock of $500,000.

Dorchester (Mass.) Gas Co.—2½ per cent dividend on its capital of $400,000.

Jamaica Plains (Mass.) Gas Co.—4 per cent dividend on its capital stock of $200,000.

Lawrence (Mass.) Gas Co.—5 per cent dividend on its capital stock of $400,000.

Malden & Melrose (Mass.) Gas Co.—3 per cent dividend on its capital stock of $170,000.

Newton & Watertown (Mass.) Gas Co.—4 per cent dividend on its capital stock of $200,000.

South Boston Gas Co.—3½ per cent dividend on its capital stock of $440,000.

Salem (Mass.) Gas Co.—3 per cent dividend on its capital stock of $300,000.

Auction Sales of Gas Stocks and Securities during the week have been as under:

Boston Gas Co.—2 shares at $775 per share.

Cambridge (Mass.) Gas Co.—46 shares at $130½.

$2500 Citizens' Gas and Gaseous Fuel Company, of Harrisburg, Pa., secured by mortgage, six per cent coupons, January and July, 32 per cent.

$12,000 National Gas Company, of Philadelphia, secured by mortgage, six per cent, coupons, February and August, coupons on from F ebruary, 1879, inclusive, 22½ per cent.

The following list of Companies in New York and vicinity is corrected weekly by GEORGE H. PRENTISS, Broker and Dealer in Gas Stocks. No. 24 Broad street, New York

COMPANIES IN NEW YORK AND VICINITY.	Capital Stock.	Par.	DIVIDENDS. Rate per ann.	DIVIDENDS. Am. of last.	DIVIDENDS. Date of last.	QUOTATI'NS Bid.	QUOTATI'NS As'd.
	$		P. ct.				
Mutual, N. Y.	5,000,000	$100	6	1½	July, '79	50	55
" Bonds	90,000	1,000	6	3½	Aug., '79	100	104
N. York "	4,000,000	.....	8	4	May, '79	85	90
Metrop. "	2,500,000	100	10	3½	Aug., '79	110†	115†
" Certfs	1,000,000	.....	7	5	Aug., '79	100‡	102‡
Harlem "	1,850,000	50	6	3	Feb., '78	35	45
Manhat. "	4,000,000	50	....‡	5	June, '79	135	145
Brooklyn, Bkln.	2,000,000	50	15	5	May, '79	115	120
Nassau	1,000,000	25	....‡	3	July, '79	50	60
" Certfs	400,000	1,000	7	3½	May, '79	82	90
People's	1,000,000	10	....‡	3½	Jan., '76	20	25
" Certfs	250,000	1,000	7	3½	July, '79	70	75
" Bonds	375,000	.....	7	3½	May, '79	90	90½
Metrop. "	1,000,000	100	5	2½	May, '79	40	50
W'msb'g "	1,000,000	50	8	2	July, '79	70	80
" Certfs	1,000,000	.....	7	3½	July, '79	85	92
Citizens'	1,200,000	20	....‡	2½	July, '79	50	60
" Bonds	315,000	1,000	.....	3½	Apr., '79	95	100
J. C., N. J.	750,000	20	10	7½	July, '79	135	145
Municipal, N. Y.	2,000,000	100	12	3	June, '79	112	119
" Bonds	750,000	100	7	3	May, '79	105	110

†Ex-dividend August 1st, 1879, 5 per cent. ‡Ex-dividend August 1st, 1879, 3½ per cent.

Copper and Silver Stocks.

[Reported by WILSON W. FAY & CO., Brokers in Mining and Miscellaneous Stocks, Room 7, Traveler Building, 31 State street.]

BOSTON, Thursday Evening, July 31, 1879.

The market, contrary to the expectations of the operators, seems to have strengthened during the warm weather, and shows no signs at present of falling off, though it will not be at all surprising if we have a dull month during August, as people are coming to the conclusion that they must have their summer vacations, and a great many have already left for some more attractive place than the noise and bustle of the stock market.

The stocks, however, continue strong and active, and, with one or two exceptions, are liable to advance still more during next month.

Calumet & Hecla has advanced steadily, and sold up to 194, which is nearly as high as it sold with the dividend on, and closes firm at 193½@194.

Copper Falls is dull and quite weak, the parties who were holding it up to $2 having withdrawn their support, and the stock dropping in consequence to $1½, which is just the amount of the assessment, and probably a fair valuation for the stock.

Franklin is rather quiet and pretty firm at 6¼@6½.

Osceola has advanced a trifle, and closes firm at 15¼@16 (ex div.)

Pewabic is dull at 2½@2¼.

Quincy is steady at 12¾@13, though there is no indication of the declaration of the August dividend, and a good many of the stockholders are disappointed in consequence. The stock closes steady, however, with no sales.

Ridge is quiet at 1¼@1¾, and no sales.

Duncan is quite firm, having sold at 3½, 3⅝, and 3¾; and closes quite strong at 3⅝@3⅞, with little stock offering.

International is also firmer at 40@50c., quite a lot of stock being taken off the market at about 40c.

Silver Islet has sold up again to 25½, and closes quite firm at 25¼@25¾.

Sullivan is also firmer, having advanced from 6¾@7½, and closing steady at 7¼@7½.

Altar sold at 20c., and closes quite firm at 20@25c.

Commonwealth has advanced somewhat, and sold at 15c. (assessment unpaid). The stockholders are to hold a meeting on Saturday, August 2d, to appoint an Auditing Committee, and to ask for a stay of proceedings in collecting

Miscellaneous Stocks and Quotations.

Sales and quotations of the stocks and bonds dealt in here, at Philadelphia and Baltimore, for the week ending the 1st inst. are given in the following tables. The Philadelphia quotations will have a * affixed. The Baltimore quotations are indicated thus †.

STOCKS.	Par Value.	High'st	Lowest	Closing	Sales: Shares.
American Coal Co.	$25	.....	.....	.....	.....
St. L., I.M.& S.R.Co.	100	28⅞	25¼	26¾	†3,140
Spring Mt. Coal Co.	50	.....	.....	.....	.....
*Cambria Iron Co.	50	.....	.....	.....	.....
*Penn. Salt Mf'g Co.	50	76	.....	76	3
*Westm'land C. Co.	50	.....	.....	.....	.....
*Buck Mt. Coal Co.	50	.....	.....	.....	.....
*Schuyl. Nav. Co.	50	.....	.....	.....	.....
†B.&O.RR.Co.1st pf	.....	110	.....	110	54
†B.&O.RR.Co.2d pf	100	101½	101	101½	25
" " " " com	90	120¾	116½	120¾	147
†George's C'k C. Co	100	.....	.....	.....	.....
†S. Clara M'g Co.	100	.....	.....	.....	.....
†Atlantic Coal Co.	10	80c.	.....	80c.	100

BONDS.	Princ'l. When Due.	Int'est. When Due.	High'st.	Lowest	Amount.
D., L. & W., 7s, conv	1882	J. & D.	.....	.....	.....
" " " " 2d 7s	1907	M. & S.	114¾	.....	$4,000
M. & E., 1st con., 7s.	1915	J. & D.	99½	.....	10,000
N.J.C., 1st mtge. new	1890	F. & A.	.....	.....	.....
" " " 1st mtge., con	1899	Q.	100¾	98	†321,000
" " " convt.	1902	M. & N.	101	99	†145,000
" " " Income	1908	M. & N.	80	75	64,100
Lehigh & W. B., con	1899	Q.	83¾	79¾	†493,000
L.&W.B., Income	1888	M. & N.	59½	57¼	65,000
" " " small	1888	M. & N.	50	.....	1,000
Am. Dock & Imp. 7s	.....	J. & J.	90	.....	3,000
St. L. I. M. & S. 1st mt	1892	F. & A.	117½	117	10,000
" " " " " 2d, 7s	1897	M. & N.	94	93	85,000
St. L. & I. M. C. & F., 1st, 7s	1891	J. & J.	98½	97½	44,000
Ches. & O., 1st mtge	1899	M. & N	45¼	44¾	76,000
" " 6s, cr. int. df	1918	J. & J.	22	21¾	22,000
D. & H. C. Co., 1st. Pa. div., 7s, coup.	1917	M. & N.	108½	108	20,000
" " " " 1st Pa., div., 7s, rg	1917	M. & S.	108½	107	25,000
D & H C Co., 1st m. rg	1884	J. & J.	102¾	102¼	9,000
" " " " "	1891	A. & O.	103½	102½	2,000
" " " " m. loan cp	1894	A. & O.	105	.....	5,000
" " " " " rg.	1894	.....	105	103	30,000
" " " " new mge.	.....	J. & D.	.....	.....	.....
*L.V.R., 1st m. 6s. cp.	1898	J. & D.	.....	.....	.....
" " " rg.	1898	J. & D.	116	.....	5,000
" " " 2d m. 7s, rg.	1910	M. & S.	122½	.....	15,000
" " " con. m. 6s, rg	1823	J. & D.	.....	.....	.....
" " " 6s cp.	1923	J. & D.	107	.....	5,000
*Pa. RR., 1st m. 6s, cp	1880	J. & J.	.....	.....	.....
" " g. m., 6s, cp.	1910	J. & J.	115¼	.....	2,000
" " " 6s, rg.	1910	A. & O.	.....	.....	.....
" " con. m. 6s, rg.	1905	Q.	.....	.....	.....
" " " 6s, cp.	1905	J. & D.	.....	.....	.....
" " new loan, 5s	.....	.....	.....	.....	.....
*P. & R. R., 1st m. 6s, R. C. 43-44	1880	J. & J.	104	103⅝	11,000
P. & R. R., 1st m. 6s, R. C. 48-49	1880	J. & J.	.....	.....	.....
P. & R. R., 2d m. 7s cp	1893	A. & O.	.....	.....	.....
" " " scrip	1882	J. & J.	71	.....	16,065
" " " in. m. 7s, cp	1896	J. & D.	.....	.....	.....
" " " c.m. 7s, cp.	1911	J. & D.	111	.....	20,000
" " " 7s. rg.	1911	J. & D.	113	.....	10,000
" " " cvt. 7s, R.C	1893	J. & J.	38½	.....	28,600
" " C. & I. Co., Deb 7s, R. C.	1892	M. & S.	.....	.....	.....
& R.C.& I. Co., m. 7s, R. C.	'92-3	various	...	.....	.....
*L. Nav. Co., 6s, rg. m.	1884	J & Q.	.....	.....	.....
" " RR., rg. m.	1897	F. & Q.	.....	.....	.....
" " cvt. co. G. R.	1894	M. & S.	.....	.....	.....
" " " Gold R. C.	1897	J. & D.	.....	.....	.....
" " con. m. 7s, rg.	1911	J. & D.	94½	94	2,000
*P. & N.Y.C., 7s, R.C.	1896 1906	J. & D.	.....	.....	.....
*Pa Canal, 6s. cp.	1910	J. & J.	.....	.....	.....
*Schuyl. Nav., 1st m. 6s. rg.	1897	M. & Q.	.....	.....	.....
*Sus. Coal, 6s, rg.	1911	J. & J.	.....	.....	.....
†Balt. & O. RR., 6s.	1880	J. & J.	.....	.....	.....
" " " " 6s.	1885	A. & O.	.....	.....	.....

Total transactions for the week.. .....$1,548,765

† Assented.

GENERAL MINING STOCKS.

Dividend Paying Mines.

Name and Location of Company.		Feet on Vein.	Capital Stock.	Shares. No.	Shares. Par Val	Assessments. Total levied to date.	Assessments. Date and amount per share of last.	Dividends. Total paid to date.	Dividends. Last Dividend.	Rate p. An	Highest and Lowest Prices per Share at which Sales were Made. July 26. H.	July 26. L.	July 28. H.	July 28. L.	July 29. H.	July 29. L.	July 30. H.	July 30. L.	July 31. H.	July 31. L.	Aug. 1.— H.	Aug. 1.— L.—	Sales.
Argenta	Nev.	1,500	.....	100,000	.....	20,000	.....	25,000	July. 1879	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belle Isle	Nev.	1,500	.....	100,000	.....	200,000	.....	30,000	July. 1879	30	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belcher, g. s.	Nev.	1,040	10,400,000	104,000	100	1,500,200	May. 1879	1 00	15,397,200	Apr. 1876	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bobtail, g.	Col.	2,500	1,136,630	227,326	5	*	.....	90,930	Nov. 1878	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bobtail Tunnel, g.	Col.	.....	100,000	20,000	5	52,000	July 1873	0 30	56,000	Dec. 1878	40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bodie, G.	Cal.	.....	10,000,000	10,000	100	75,000	May. 1879	1 00	900,000	July 1879	1 00	.....	15¾	14¾	14	.....	13	12¾	13	12¾	13⅛	13	13	.....	1,625
California, g. s.	Nev.	600	54,000,000	540,000	100	.....	.....	30,510,000	May. 1879	50	.....	.....	5	4.95	5	4.95	5	4.90	4.80	.....	4.85	4.85	.....	.....	2,050
Calumet & Hecla, c.	Mch	.....	2,000,000	80,000	25	1,200,000	.....	14,250,000	May. 1879	5 00	191	.....	.....	.....	193	.....	194	.....	.....	.....	.....	.....	29
Caribou Con.	Col.	1,400	1,000,000	100,000	10	.....	.....	30,000	July. 1879	1	.....	.....	.....	.....	.....	.....	6¼	6	6⅜	6¼	6⅜	6¼	3,080
Central, c.	Mch	.....	500,000	20,000	25	100,000	June 1862	0 65	1,340,000	Feb. 1879	4 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Challar, g. s.	Nev.	700	11,100,000	112,000	100	1,750,000	Sept. 1878	5 00	3,040,000	Feb. 1872	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Copper Falls, c.	Mch	.....	1,000,000	20,000	50	.....	.....	100,000	Nov. 1871	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cons. Virginia, g. s.	Nev.	710	54,000,000	540,000	100	474,600	June 1873	3 00	41,040,000	May. 1879	50	.....	4.75	.....	4.80	4.70	4.90	4.75	4.80	4.75	4.85	4.75	4.75	4.70	3,040
Confidence, g. s.	Nev.	130	2,496,000	24,960	100	256,320	Apr. 1878	0 50	78,000	May. 1865	8⅓	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Crown Point, g. s.	Nev.	600	10,000,000	100,000	100	2,173,370	Dec.. 1878	1 00	11,588,000	Jan.. 1875	2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Eureka Cons., g. s. l.	Nev.	.....	5,000,000	50,000	100	100,000	May. 1876	1 00	4,000,000	July. 1879	1 00	.....	16	.....	15¾	15¾	15¾	15½	.....	.....	.....	.....	.....	.....	290
Excelsior M. & M. Co.	Cal.	525 acres	10,000,000	100,000	100	.....	.....	.....	July. 1879	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Findley, G.	Geo.	.....	200,000	200,000	1	.....	.....	8,000	May. 1879	1c	.....	.....	54	52	56	52	55	53	59	54	64	57	58	57	29,050
Franklin, c.	Mch	.....	500,000	20,000	25	360,000	June 1876	5 00	585,000	Nov. 1871	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gould & Curry, g. s.	Nev.	612	10,800,000	108,000	100	3,044,000	July. 1879	1 00	3,826,800	Oct. 1870	10 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Prize	Nev.	1,500	.....	100,000	.....	100,000	July. 1878	1 00	400,000	Feb. 1878	1 00	.....	.....	.....	3.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	10
Great Eastern		1,200	300,000	300,000	100	.....	.....	10,000	July. 1879	1	.....	.....	60	.....	59	57	57	.....	57	.....	56	.....	60	54	5,400
Green Mountain S.M.C.	Cal.	4,350	1,250,000	.....	10	.....	.....	6,250	July. 1879	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hale & Norcross, g. s.	Nev.	400	11,200,000	112,000	100	3,082,000	Mar. 1879	1 00	1,598,000	Apr. 1871	5 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Homestake, g.	Dak	.....	10,000,000	100,000	100	200,000	Apr.. 1878	1 00	210,000	July 1879	30	.....	38¼	.....	.....	.....	38	.....	.....	.....	.....	.....	.....	.....	217
Hukill, g. s.	Col.	3,288	1,000,000	100,000	10	*	.....	.....	Dec. 1878	0 10	.....	.....	1.70	1.60	.....	.....	3.00	.....	3	.....	1.70	1.55	.....	.....	2,724
Independence	Nev.	1,500	.....	100,000	.....	75,000	Feb.. 1878	15	175,000	Nov. 1878	25	.....	2.15	.....	2.20	2.15	2.05	1.95	2.25	2.15	2.20	2.10	2.20	2.15	7,645
Kentuck, g. s.	Nev.	95	3,000,000	30,000	100	300,000	Aug. 1878	1 00	1,252,000	Mar. 1870	5 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
K. K. Cons.	Nev.	.....	.....	50,000	.....	300,000	Jan.. 1879	1 00	50,000	Sept. 1873	0 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leadville	Col.	.....	2,000,000	.....	.....	*	.....	60,000	June 1879	10	.....	.....	2.95	2.60	3.05	2.75	2.90	2.65	3.00	2.75	3.20	2.85	2.90	2.60	22,025
Leeds	Uth.	3,000	.....	60,000	.....	.....	.....	78,000	Oct.. 1878	0 15	.....	.....	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Leopard, L. g. s.	Nev.	1,500	5,000,000	50,000	100	225,000	Mar. 1879	50	162,500	Dec. 1876	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Little Pittsburg	Col.	.....	20,000,000	200,000	100	.....	.....	800,000	July. 1879	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
McClinton	Cal.	1,000	.....	60,000	.....	60,000	May. 1879	0 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manhattan	Nev.	.....	.....	100,000	.....	50,000	July. 1879	1 00	400,000	Feb. 1877	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Martin White	Nev.	.....	.....	100,000	.....	650,000	Dec. 1878	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Merrimac, s.	Mas.	1,500	500,000	100,000	5	*	June	120,000	Mar.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minesota, c.	Mch.	.....	1,000,000	20,000	50	436,000	.....	1869	1 00	1,320,000	Mar. 1876	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Modoc	Cal.	4,000	.....	100,000	.....	450,000	Feb.. 1879	0 50	50,000	Dec. 1876	0 50	.....	.....	.....	.....	.....	.....	.....	1.45	.....	.....	.....	.....	.....	200
Moose.	Col.	39,000	2,000,000	200,000	10	*	.....	550,000	Mar. 1878	0 25	.....	.....	3.00	.....	.....	.....	3.00	2.75	3.00	.....	.....	.....	2.75	.....	1,900
National, c.	Mch.	.....	500,000	20,000	25	195,000	Oct.. 1875	1 00	360,000	Oct. 1873	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. Y. & Colorado, g.	Col.	.....	1,000,000	50,000	20	*	.....	25,000	July. 1879	0 10	.....	.....	1.85	.....	.....	.....	1.90	1.85	1.90	1.85	1.90	1.85	1.75	.....	1,100
Northern Belle, s.	Nev.	1,000	5,000,000	50,000	100	.....	.....	1,425,000	Feb.. 1878	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ontario.	Uth.	3,000	10,000,000	100,000	100	.....	.....	2,200,000	June 1879	50	.....	.....	41	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Ophir, g. s.	Nev.	675	10,080,000	100,800	100	3,436,800	Nov. 1878	1 00	1,394,400	Mar. 1864	4 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osceola, c.	Mch.	.....	1,000,000	40,000	25	880,000	Mar. 1876	2 00	.....	July. 1879	1 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pewabic, c.	Mch.	.....	500,000	20,000	25	185,000	June 1868	3 00	400,000	July 1873	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Potosi, g. s.	Nev	700	11,000,000	112,000	100	.....	.....	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Phœnix, c.	Mch.	.....	1,000,000	20,000	50	817,500	Sept. 1870	3 00	10,000	Dec. 1876	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plumas	Cal.	.....	1,000,000	100,000	10	.....	.....	151,000	July 1879	8	.....	.....	3.00	2.95	2.85	.....	2.95	2.90	2.85	2.80	.....	.....	.....	.....	775
Quincy, c.	Mch.	.....	200,000	20,000	10	.....	.....	2,230,000	Feb. 1878	5 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Raymond & Ely, g. s.	Nev.	5,000	3,000,000	30,000	100	800,000	Apr.. 1879	1 00	3,075,000	Sept. 1873	3 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ridge, c.	Mch.	.....	500,000	20,000	25	200,000	.....	90,000	Feb. 1875	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rye Patch	Nev.	1,600	.....	30,000	.....	157,500	Dec.. 1878	1 00	105,000	Dec. 1877	0 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Joseph, L.	Mo.	2,000 acs.	1,000,000	100,000	10	.....	.....	250,000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Savage, g. s.	Nev.	800	11,200,000	112,000	100	4,196,500	July. 1879	1 00	4,400,000	June 1869	3 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Seaton, g. s.	Col.	1,700	500,000	50,000	10	*	.....	.....	May 1877	0 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sierra Nevada, g. s.	Nev.	3,650	10,000,000	100,000	100	2,550,000	Apr.. 1879	2 00	102,000	Jan. 1871	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver Islet	Mch	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	24	23¾	24¼	.....	25¼	.....	.....	.....	.....	.....	.....	.....	35
Silver King	Ariz	1,500	10,000,000	100,000	100	.....	.....	450,000	Nov. 1878	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard	Cal.	.....	10,000,000	100,000	100	50,000	July 1878	1 00	1,200,000	July 1879	0 50	.....	26¼	25⅞	27½	26⅜	30	29	29⅞	29	29¾	29½	29¾	29	1,945
Yellow Jacket, g. s.	Nev.	1,200	12,000,000	120,000	100	4,038,000	Apr.. 1879	1 00	2,184,000	Aug. 1871	2 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Non-Dividend Mines.

Allouez, c.	Mch.	.....	1,000,000	20,000	50	940,000	May	1876	5 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alpha, g. s.	Nev.	306	3,000,000	30,000	100	240,000	Mar.	1878	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Alta	Nev.	600	.....	108,000	.....	1,101,000	Feb.	1879	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Am. Flag, g.	Col.	5,300	600,000	60,000	10	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20c	.....	20c	19c	20c	..	20c	18c	20c	18c	20c	18c	6,500
Andes	Nev.	2,000	.....	100,000	.....	380 000	May.	1879	0 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Baltimore Cons.	Nev.	1,050	.....	84,000	.....	1,015,000	Apr.	1878	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Benton	Nev.	600	.....	108,000	.....	91,800	Dec.	1878	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bechtel	Cal.	.....	.....	60,000	.....	95,000	Apr..	1879	0 25	.....	.....	.....	.....	.....	.....	.....	1.50	.....	.....	.....	.....	.....	.....	1.50	.....	225
Belvidere	Cal.	1,500	.....	60,000	.....	33,000	Feb..	1879	0 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bertha & Edith. g.	Vir.	645 acs.	500,000	500,000	10	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22c	19c	20c	18c	14c	13c	16c	13c	17c	15c	16c	14c	192,000
Best & Belcher, g. s.	Nev.	545	10,080,000	100,800	100	639,390	Apr..	1879	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Buckeye	Col.	.....	2,000,000	400,000	5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52c	50c	53c	50c	53c	46c	46c	43c	46c	45c	48c	45c	27,800
Bullion, g. s.	Nev.	943½	10,000,000	100,000	100	3,102,000	May.	1879	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bulwer	Cal.	.....	10,000,000	100,000	100	.....	July.	1879	1 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	9¼	8½	.....	.....	.....	.....	.....	.....	260
Cal., B. H.	Dak.	.....	10,000,000	100,000	100	55,000	Feb..	1879	0 35	.....	.....	.....	.....	.....	.....	.....	3	.....	.....	.....	3	2.75	2.75	.....	2.75	2.50	2.25	.....	1,450
Caledonia	Dak.	2,188	10,000,000	100,000	100	1,640,000	Apr.	1879	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cashier	Col.	.....	500,000	250,000	2	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Challenge	Nev.	90	.....	50,000	.....	10,000	Nov.	1878	0 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cleveland, g.	Col.	3,715	250,000	25,000	10	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.50	.....	3.50	3.45	3.45	.....	3.45	.....	3.50	3.40	3.50	3.45	1,450
Cons. Imperial, g. s.	Nev.	468	50,000,000	500,000	50	875,000	Feb..	1879	0 20	.....	.....	.....	.....	.....	.....	.....	1.45	1.35	1.40	1.35	1.30	1.25	1.30	1.20	1.90	1.25	1.40	1.30	7,550
Con. Pacific	Cal.	1,400	600,000	60,000	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	7⅞	7¼	7⅜	7¼	7⅛	.....	7¼	7⅛	7⅜	7	6⅞	6½	1,070
Dahlonega	Ga.	.....	250,000	250,000	1	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	21c	.....	21c	.....	21c	20c	21c	20c	20c	.....	21c	.....	9,000
Dana, c.	Mch.	.....	500,000	20,000	25	68,000	Jan..	1863	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Day	Nev.	1,500	10,000,000	100,000	100	70,000	Feb..	1879	0 15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dayton	Nev.	1,000	10,000,000	100,000	100	750,000	Apr.	1878	0 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
De Frees	Ariz	1,500	10,000,000	100,000	100	140,000	May.	1879	15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Duncan, s.	Ont.	.....	1,200,000	60,000	20	75,000	July	1876	41½	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Exchequer, g. s.	Nev.	400	10,000,000	100,000	100	480,000	July.	1879	1 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Gold Placer, g.	Col.	.....	5,000,000	200,000	25	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	17c	16c	.....	.....	16c	.....	15c	.....	15 c	13c	15c	14c	5,700
Goodshaw	Cal.	.....	10,000,000	100,000	100	30,000	Apr.	1879	0 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	45c	.....	40c	35c	.....	.....	.....	.....	.....	.....	300
Granville, g.	N. C.	1,231 acs.	300,000	300,000	1	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	22c	.....	.....	.....	.....	.....	25c	.....	*	.....	.....	.....	1,100
Humboldt, c.	Mch.	.....	500,000	20,000	25	100,000	Sept	1878	0 15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Hussey	Nev.	4,500	10,000,000	100,000	100	125,000	May.	1879	0 15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
International, s.	Ont.	.....	1,200,000	60,000	20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	40c	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Julia, g. s.	Nev.	3,000	11,000,000	110,000	100	872,500	July.	1879	1 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Justice, g. s.	Nev.	2,100	10,500,000	105,000	100	2,868,500	May.	1879	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
King's Mountain, g.	N. C.	.....	1,200,000	120,000	10	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kossuth	Nev.	2,700	10,700,000	108,000	100	421,200	Aug.	1877	0 15	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lacrosse	Col.	3,900	1,000,000	100,000	10	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	18c	.....	19c	.....	19c	.....	.....	.....	20c	19c	20c	.....	4,600
Leviathan	Nev.	2,000	10,000,000	100,000	.....	265,000	Mar.	1879	25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45c	.....	.....	.....	.....	.....	.....	.....	300
Lucerne	Col.	4,200	5,000,000	500,000	10	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	29c	.....	30c	29c	30c	29c	30c	.....	30c	.....	30c	.....	14,700
Madison, c.	Mch.	.....	500,000	20,000	25	123,000	Sept	1876	0 10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mariposa preferred.	Cal.	44,387	5,000,000	50,000	100	1,425,000	June	1877	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" common	Cal.	acres.	10,000,000	100,000	100	1,425,000	June	1878	1 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
May Belle		1,500	10,000,000	100,000	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
McCracken	Ariz	4,500	10,000,000	100,000	100	100,000	Oct	1878	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mexican, g. s.	Nev.	600	10,080,000	100,800	100	318,200	July.	1879	2 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mono	Cal.	750	5,000,000	50,000	100	75,000	Mch.	1879	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Navajo	Nev.	1,500	10,000,000	100,000	100	145,000	Feb..	1879	0 20	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	45c	.....	.....	45c	.....	150
New York	Nev.	1,000	10,000,000	100,000	100	80,000	Apr.	1879	0 40	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orig. Keystone	Nev.	1,500	10,000,000	100,000	100	100,000	Jan..	1879	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Overman, g. s.	Nev.	1,200	3,840,000	38,400	100	3,404,280	Mar.	1879	3 00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Petherick, c.	Mch.	.....	500,000	20,000	100	165,535	.....	1876	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quicksilver preferred.	Cal	8,500	4,291,300	42,913	100	*	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	39c	.....	39c	.....	.....	.....	39c	.....	225
" common	Cal.	acres.	5,708,700	57,087	100	*	.....	Apr..	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	14c	.....	.....	.....	.....	.....	100
Seg. Belcher, g. s.	Nev.	160	640,000	6,400	100	244,800	Apr..	1876	0 60	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver Hill, g. s.	Nev.	5,400	10,800,000	108,000	100	1,404,000	Feb	1879	0 50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver Prize.	Nev.	1,500	10,000,000	100,000	100	65,000	Mar	1879	0 25	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Star, c.	Mch.	.....	500,000	20,000	25	265,000

the present assessment, and the stock is somewhat stronger, closing 14c. bid and 18c. asked.

Rescue is still offered at $1.

Southern Nevada sold at $2, and closes 1⅞ bid and 2¼ asked.

Waukeag is offered at 3⅛.

It is said that the Minong Mining Company is to be reorganized. The scheme is, that a certain number of gentlemen shall bid in the property at the forthcoming sale, under a debt of $19,220.93, and then organize the Minong Copper Company, with a capital stock of 50,000 shares, which will be exchangeable for present shares on the basis of one new share for two old ones.

Gold and Silver Stocks.

New York, Friday Evening, August 1, 1879.

The total of shares sold shows quite an increase, yet this is made up largely of transactions in a low-priced, demoralized "fancy." Summer quietness still prevails, and the unsettled state of the San Francisco market intensifies the dullness here.

The Bodie stocks have had a very fair proportion of the business. The San Francisco *Stock Report* of the 25th ult. says:

"The break in the Bodie stocks is unwarranted, and we think that Bodie will be the first district to recuperate from the effects of the depression. The Bodie district has tangible, living ore-bodies, and only needs an increase of mill facilities. With the necessary mills, Bodie District will astonish the world with its bullion output. We understand that the managers of the Bulwer will shortly erect a large mill to crush the rich ore of that mine. And it is also understood that one or two custom mills will be built by capitalists who have inquired into the resources of the district. Our faith in Bodie District has not weakened, but, on the contrary, we think better of the district than ever before. The Bodie stocks, in our opinion, are worth more than the ruling prices in many instances. As mines go, the Bodies are cheap."

Bodie has been largely dealt in in this market, the sales amounting to 1625 shares at $15½@$12¼ @$13.

In Standard, the dealings have amounted to 1945 shares, selling as low as $25⅞ on Saturday and up to $30 on Tuesday. Since then the price has ranged between 29¾ and $29.

To-day, 225 shares of Bechtel were sold at $1.50 per share.

The sales of Bulwer have aggregated 260 shares at $8½@$9.

Consolidated Pacific is attracting a great deal less attention, the sales for the week amounting to but 1070 shares at $7½@$6½.

On Monday and Tuesday, there were sales of Goodshaw amounting to 300 shares, at 45@35c.

Tioga has shown weakness, the sales amounting to 270 shares at $4.10@$3.60.

The Comstock mines are rather quiet, and dealings centered in a few stocks, there being much distrust as to the future of these stocks.

The sales of California aggregate 2050 shares at $5@$4.80.

Consolidated Virginia shows a little larger business than California, the sales amounting to 2640 shares at $4.90@$4.70.

The sales of Consolidated Imperial amount to only 7550 shares at $1.25@$1.40.

On Tuesday, 300 shares of Leviathan sold at 45c.

In the Tuscarora stocks, we note sales as follows: 10 shares of Grand Prize at $3.50; 7645 shares of Independence at $1.95@$2.20. This is a very large business for this stock. Navajo only records 150 shares at 45c., and Tuscarora 800 at 14@13c.

In the Black Hill stocks, Homestake figures with sales of 217 shares at $38½@$38. This company will start, very soon, its new mill, which will increase the productive capacity 150 per cent.

Great Eastern records sales of 5400 shares at 60@54c.

Caledonia has been weak, and records the largest business that has yet taken place in this market, the sales amounting to 1450 shares at $3@$2.25.

In the miscellaneous stocks, we note sales as follows:

Caribou, 3086 shares at $6@$6⅜.

In Eureka, there were dealings early in the week amouting to 290 shares at $16@$15½.

On Wednesday, 200 shares of Modoc sold at $1.45.

In the Quicksilver stocks, 225 shares of Preferred sold at $39, and 100 shares of Common at $14.

Sutro Tunnel has been fairly active, the sales amounting to 7925 shares at $4¼@$4½.

There were dealings in Tip Top early in the week, amounting to 250 shares, at 80@75c.

The business in Ontario amounts to but 100 shares, at $41. The reports from this mine continue to be of a very encouraging nature. Some 30 tons from the new strike on the 6th level have been sent to the mill.

In stocks of the regular list of the Mining Exchange, we note the following:

The quotations for Hukill are for the new shares. The sales for the week amount to 2724 shares, at $1.70@$1.55.

Findley has been quite active on favorable reports from the mine. The dealings aggregate 29,050 shares at 52@64c.

Leadville has been quite active and irregular. The sales amount to 22,025, selling up to $3.20 yesterday and down to $2.60 to-day.

New York & Colorado, with transactions amounting to 1100 shares, has ranged between $1.90@$1.75.

Plumas is receiving but little attention, and does not improve in price. The sales amount to 775 shares at $3@$2.80.

Cleveland records 1450 shares at $3.50@3.40.

In the "fancies," we note the following:

Bertha & Edith has been the leading card, the sales amounting to 192,000 shares. On Saturday, this stock sold at 22c., while on Wednesday it declined to 13c., ranging between 17c. and 14c. since. American Flag has been more largely dealt in, the sales amounting to 6500 shares at 20@18c. Buckeye has been fairly active, with an inclination to weakness. The sales aggregate 27,800 shares at 53@43c. Dahlonega has ranged between 20c. and 21c., with sales amounting to 9000 shares.

Gold Placer is quiet, the sales amounting to but 5700 shares at 17@13c.

The dealings in Granville were confined to Saturday and yesterday, and amount to 1100 shares at 22@25c. The sales of Lacrosse aggregate 4600 shares at 18@20c.

Lucerne records sales of 14,700 shares at 29@30c.

Our readers will probably remember that we have led them to expect but little from Bertha & Edith. The mill is running, and, as can be done from one end of the South to the other, some gold has been secured; but we are informed that it is not sufficient to pay expenses of mining and milling. We have never questioned that gold and high assays could be found on this property; but unless it can be made to pay a profit, it has no value. Had this stock been selling at 1@4c. per share, it might have been a fair gamble. The friends of this enterprise are making great efforts to support the price of the stock. The property should be in a position now to show results—good or bad—and no amount of talk will answer anymore.

The Eagle mine near Fredericksburg, Va., which made quite a record as a producer of gold before the war, has been reopened, and it is found that there are several thousand tons of ore in sight. A company has been formed under the laws of this State under the style of the Rappahannock Gold Mining Co., with a capital of $250,000, divided into 250,000 shares, of the par value of $1 each. The company has a good management, and we wish the enterprise the success which the promoters confidently expect.

The stocks of the Leadville Mining Company, the Caribou Consolidated Mining Company, and the Central Arizona Mining Company were passed by the Governing Committee of the New York Stock Exchange on the 29th ult. Central Arizona Mining Company was organized December 13th, 1878, with $10,000,000 capital, the stock being non-assessable. The property, on which $200,000 have been expended in improvements, including a 40-stamp mill, is situated in Maricopa County, Arizona Territory.

Review of the San Francisco Market.

The downward course of mining shares in San Francisco has been checked, and our record of prices for the week show, in nearly every instance, a slight improvement on the extremely low prices attained a week ago. Water and heat in the lower levels of the Comstock still continue to interfere with progress, particularly in what are generally considered the best mines on the lode. It is thought, however, that when connection shall have been made between all of the mines and the Sutro Tunnel, a better state of affairs will set in. It is thought that the recent depression of the market was mainly influenced by the withdrawal of money ordinarily used in stock speculation.

The latest loans on stocks by the San Francisco banks which have been made public are as under; but they are subject to change at any hour, and are, probably, not in all cases a fair criterion to go by; Mexican, $12; Ophir, $15; Gould & Curry, $4; Best & Belcher, $8; Savage, $5; Challar, $3; Hale & Norcross, $5; Crown Point, $2; Yellow Jacket, $7; Alpha, $4; Belcher, $2; Consolidated Virginia, $3; Sierra Nevada, $20; California, $3; Bullion, $2; Exchequer, $2; Overman, $4; Justice, $1; Union, $15; Caledonia, $1; Alta, $2; Eureka Con., $8; Potosi $2; Utah, $8, and Bodie Con., $7 per share.

Quotations of Alta are fairly maintained. Opening to-day at 6¾, against 6⅝ a week ago.

We note recent sales of stock of the Albion Mining Company, Eureka District, at 30 cents per share. The Richmond Company has brought suit against the Albion for alleged working on the ground of the Richmond mine. Plaintiffs ask recovery of ground, and claim $10,000 damages.

Alpha shows a slight improvement on the closing price in our last, and seems to be gaining strength during later transactions of the week. It is anticipated soon to reach the bottom of joint winze on 2600 level, at which point a station will be constructed.

Recent sales of Argenta have been made at $1.30 @$1.75 per share. There is no particular change to note in this mine. Vein in the winze, 400 east, main shaft, shows 3 feet fair milling ore.

Drifting south on the 200, 300, and 400 levels of the Bechtel mine is being continued on the main vein Late quotations were $1@1.50 per share.

Belle Isle shows activity in San Francisco. Recent sales were made at $3.50@$4.50 per share. This mine is supplying ore for the 20-stamp mill of the Grand Prize company.

We note recent sales of Benton at $4.25 per share.

Belcher shows an improvement, opening at $4½, against $3⅜ a week ago. Main incline of this mine is 150 feet on slope below the 2760 station. Cross-cut No. 1, 2560 level, is being advanced at the rate of 5 feet per day, cutting fine-looking quartz.

Best & Belcher is fairly maintained and shows a slight improvement. The sinking of the large new joint shaft has been suspended on account of water.

San Francisco Mining Stock Quotations.

Daily Range of Prices for the Week.

Name of Company	Closing Quotations. July 25.	July 26.	July 28.	July 29.	July 30.	July 31.	Opening. Aug. 1.
Alpha	21	22	20	19⅛	19⅛	20½	21
Alta	7	7⅜	6½	6¾	6½	6¾	6¾
Argenta							
Bechtel		1½	1½	1⅜	1¼	1¼	1¼
Belcher	4	4¼	4⅛	4	3⅞	4¼	4¼
Belle Isle							
Benton							
Best & Bel.	16½	17¼	16¼	16	16⅝	16⅝	16⅝
BlackHawk							
Bodie	14	11½	11¼	12	12	12⅛	11½
Booker							
Bullion	6¼	5⅝	5	5⅛	5	5⅛	
Bulwer		8¾	8½	8½	8¼	8¼	8¼
Caledonia							
California	5⅞	4⅞	4¾	4⅞	4¾	4¾	
Challar	6	6⅜	6⅛	6	5¾	6¼	6¼
Confidence		11⅛	11⅛	10¼	10½		
Con. Imp	1⅜	1⅜	1¼	1¼	1¼	1⅜	1⅜
Con. Pacific	7¼	7¼	7	7⅛	6⅞	6⅛	6¾
Con. Va.	4⅝	4⅝	4¾	4⅝	4¾	4⅝	4¾
Crown P'int	4⅜	4⅛	4¼	4	4¼	4⅛	4⅝
Endowm'nt							
Eureka Con	14¾		15	15	14⅝		
Exchequer	5¼	5⅛	5	5⅛	5⅛	5¾	5¾
Goodshaw							
Gould & Cur	8⅝	9¼	9	8¾	8¾	9⅛	9⅛
Grand Prize	3¾	3¾	3¾	3¾	3¾	3⅝	
Hale & Nor.	11¾	13	11¾	11½	11⅝	12¼	12¼
Hamburg							
Homestake							
Hussey							
Indep'd'nce	2	2	1¾	2⅛	2	2	2
Jackson							
Julia Con.	2¾	2⅞	2¾	2¾	2½	2⅝	2⅝
Justice	4	4⅛	4	3⅝	4	4	4
Kentuck		4⅛	4¼	4		3⅞	
Kossuth							
Leopard							
Leviathan	13-32	⅜	11-32	5-16	5-16	¼	
Manhattan							
Mar. White	5⅞	5½	5½	5¼	5	5	
McClinton							
Meadow Val							
Mexican	22	24½	22¼	21	22	22½	22¼
Mono	7¼	7½	6¾	6⅞	7	7¼	7½
Navajo							
North. Belle	4⅛		4¼	4⅜	4¼	4¼	
Ophir	31¼	32¼	31	30	31¼	32	32
Orig. K'ys'e							
Overman	8⅛	8⅞	8⅝	8	8¼	9¼	
P. Sheridan							
Potosi	4¼	4⅜	4¼	4⅛	4¼	4¼	4⅛
Ray. & Ely	4		4	3⅞	4	3⅞	
Richer							
Savage	10⅞	12	10¾	10¼	11	11	11
Scorpion		1⅞	1¾	1¾	1¾	1⅞	
Seg. Belcher							21
Sierra Nev.	35	36¾	35	33	36	40	37½
Silver Hill		1½	1¼	1⅛	1⅛	1¼	
Silver King							
Standard							
Summit							
Tioga		4	3⅝	3¼	3¼	3¼	3¼
Tip Top							
Union Con.	28	32½	28¾	27½	30¾	†30½	30
Utah		16	15½	15	15½	15½	15½
Ward							
WashoeCon							
Yel. Jacket	14½	16½	16	14½	14⅝	16¼	15⅞

* Opening. † Assessed $2. ‡ Ex-Dividend.

Bullion: there is nothing of particular importance to note of this mine. Every thing looks well in the different workings.

Bodie opens at $11½, ex dividend of $1 per share; this is the best price of the week. Various statements concerning this mine all agree that the ore continues rich, and that the appearance of the mine is very favorable.

We note recent sales of Black Hawk at $1 per share; principal work in this mine is confined to drifting in winze on the Warren vein, 320-level.

Bulwer opened at same price as a week ago. The south drift, 380 level, is in 109 feet; ledge 3 feet wide, in good ore.

Chollar opens at a slight advance. Combination shaft has been drained of the water, and sinking is resumed.

We have no quotation of Caledonia. Recent sales, however, were made at $2 per share. Principal operations in this mine are confined to sinking a winze, 1600 level, the total depth of which is 242 feet.

Con. Imperial unchanged. Connection has been made with this mine through the Yellow Jacket and Crown Point mines; all the water of the 2400 and 2600 levels is sent to the Belcher and Crown Point air-shaft, and there raised.

Crown Point opens at an advance. We note nothing of special interest in this mine.

The stock of the old bonanzas shows no change.

In the Consolidated Virginia, west joint cross-cut, 850 level, is averaging 4 feet per day, and is now in 455 feet, cutting vein-matter carrying quartz. The output of this mine is increasing. All the water of the C. & C. shaft has been drained into Sutro Tunnel.

Con. Pacific opens at $6¾, against $7 a week ago. Nothin. of especial interest to note of this mine. Active work is going forward.

De Frees has recently sold on the San Francisco market at 20c. per share. This company is in legal difficulties.

Eureka Consolidated, on the 30th ult. (latest prices), was quoted at $14⅝ per share, which is a slight decline on quotations ruling in our last. The subject of sinking a new shaft is being considered by the trustees. The ore-bodies look well, and yield 150 tons per day. Furnaces are running well, and produce about 30 tons of bullion daily.

Exchequer opens at $5⅜ against $4⅝ in our last. At a recent meeting of the stockholders of this company, fully 82,000 shares were represented. It was unanimously resolved to change the present management.

Grand Prize is weaker, closing yesterday at 3⅜, against $4 per share as recorded a week ago. It is anticipated soon to have the station complete and cross-cutting commenced at the 600 level of this mine, and a recent letter states that, unless unusual detentions occur, the company will start its ten stamps on its ore by August 1st.

Gould & Curry opened to-day at 9⅛, against 8⅝, as in our last. A strong flow of water in this mine retards operations, and naturally interferes with the sinking of the joint shaft.

Hale & Norcross is unchanged. Water is the main trouble with this mine, and it seems to be all the company can do to keep it down.

Independence shows an improvement, which has been maintained during the operations of the week. The cross-cut at the 500-foot level of this mine is in 56 feet. Stope yielding well, and mill running as usual

In the stock of the Jackson Mining Company we note recent transactions on the San Francisco market at $4 per share. There is nothing of special importance from thismine.

Julia has materially declined, quotations throughout the week being considerably below those ruling for some time past. The lower levels of this mine are said to be so hot that human beings can not remain over ten minutes at a time without imminent danger to their life, and no plan equal to supplying the existing necessity for fresh air currents has yet been devised. So intense is the heat, in fact, that men working in the winze on the 1000 level, near the Ward line, are compelled to put on their shirts in coming out of the shaft to prevent their skin being actually blistered. The drift on this level is said to be much hotter than the winze.

Justice opens to-day at a slight improvement. The ore-stopes on the 950 level of this mine are yielding their usual quantity of good ore, and an improvement in the quality is noted.

The outlook in the Lady Bryan mine is improving, particularly in the north and south drifts on the 600 level. This stock has been selling in San Francisco recently at 90c. per share.

We note recent sales of the stock of the Lady Washington Company at $1.25 per share. The prospects of this mine are said to be good.

Leviathan is somewhat lower. Nothing of special importance from the mine.

The ore stopes on the 700 level of the Leopard mine still continue south, and are said to be producing an excellent quality of ore. This stock is fairly active in San Francisco at $1.25 per share.

We note sales of the stock of the Mammoth Company at $11½@$12 per share. The prospects of this mine are said to be very good.

Martin White closed yesterday at $5 per share, against $6 a week ago. This decline has been nearly gradual during the operations of the week. The output from this mine seems to be well maintained, the most recent shipment noted showing a product equal to nearly $18,000 per week.

Manhattan appears to have gone out of sight, not a sale of the stock being reported, nor a single word of information from the mine made public.

The stock of the Mexican and Ophir mines shows an advance of $2 each. The flow of water in the Mexican mine interferes with sinking; but the water of the Ophir mine is now flowing through Sutro Tunnel. Connection has been made between the north drift on the 2000 level of the Ophir with the Union shaft. This drift runs through Ophir, Mexican, and Union Con., and has heretofore been very hot. It will now be much cooler. The Union shaft has now an up-cast air-current. The connection is important besides the matter of ventilation, as the water from the Sierra Nevada can be sent through by this level to the Ophir, and thence to the C. & C. shaft, where it will be pumped into the north lateral drift of the Sutro Tunnel.

Mono opens to-day at 7½, the same price as recorded a week ago. Late letters from the mine say they struck a ledge 3 feet in width, 400 level, on the Bodie line, which looks well.

The quotation of Northern Belle is well sustained. Nothing of special interest from the mine.

Overman closed at an advance of $1 per share.

Savage opens at a decline of $1 per share. At the recent annual meeting of this company, the Secretary stated in his report that the disbursements had been $484,206.41, of which $164,953.34 were for labor. The cash on hand at the last meeting was $27,084.87; three assessments brought an aggregate of $336,000; and there is an over-draft of $79,235.49.

Stock of the new Bonanzas shows advances of about $5 per share each. The water in the incline is decreasing. The north drift from the 2300 station is showing some quartz as it is advanced. An increase of water is encountered in the main north drift, 1600 level, of the Union Consolidated mine, making progress necessarily slow.

Tip Top opens at $3¼ per share—a decline from previous quotations.

Utah shows little improvement. Water is gradually decreasing.

Yellow Jacket shows quite an improvement during the week on the prices recorded a week ago, and opens to-day at $15⅛, against $14, as in our last. The main shaft has attained a depth of nearly 2700 feet, and work progresses satisfactorily. In another part of this issue, we present an abstract of this company's operations as submitted at its annual meeting, recently held at San Francisco.

The San Francisco *Commercial Herald* of the 24th ultimo, in speaking of the mining stock market for the week preceding that date, says no revival has shown itself, and all efforts to do so—if any have been recently made—have proved abortive. The character of the operations at present is not at all encouraging, though nothing will prevent an advance should the "drain" finally reveal ore in any part of the lode upon which it is now exercising its influence. Possibly for this very reason the market is now kept down—that the shares may be taken in preparatory or in expectation of a forward movement upon the revealment which has been so long the hope of the comparatively few outsiders who have been able, through the sorest trials, to hold on to stocks they purchased long ago. A hope for the best is entertained, and in doing so the public sympathies are with those outsiders who have nothing to do with the manipulation of shares, but whose gains, if any, are always small. A prosperous movement in the direction indicated is hoped for, but fear is expressed it will never take place. Assessments are still freely levied. The Eureka *Leader* says the water problem at the Eureka Consolidated mine has solved itself without any measures being adopted to check it or pump it out. The flow from the 12th level drift has almost ceased, and the water, which fills the incline and drifts up to that point, is gradually receding, draining off into the porous country rock, and that there is no doubt that a subterranean pool was tapped, which sought an outlet at the place opened on the 12th, and which is now exhausted. Superintendent Donnelly is confident that, as soon as the air-compressor and pumps are overhauled and once more in running order, there will be no trouble in clearing the two levels of the accumulation, and that work will then go on as usual. The Union Consolidated expended $413,330 during the fiscal year, and have on hand a cash balance of $25,360. The assessments during the year amounted to $343,099. The Yellow Jacket, in its fiscal report for the year, states the receipts to be $446,129, with cash on hand amounting to $40,715. The new shaft machinery has already cost $985,900, is 2687 feet deep, and no "bonanza" yet.

ASSESSMENTS, with dates when delinquent.: Mt. Potosi, 25c., August 26th; Brilliant Mining Co., Nevada, 10c., August 18th; South Bodie, California, 25c., August 25th; South Bulwer, California, 15c., August 20th; Manhattan S. Mg. Co., Nevada, $1 August 21st; Remington Gravel Mg. Co., 10c., August 17th; Paradise Valley Mg. Co., 25c., August 18th; Western Mg. Co., Arizona, $1, August 26th; General Lee Mg. Co., Arizona, 2c., August 16th; Day Mg. Co., 10c., August 10th.

OFFICE

Rappahannock Gold Mining Company,

No. 60 Broadway.

We are offering 50,000 shares (out of 100,000 shares in the Treasury of the Capital Stock of the Rappahannock Gold Mining Company at 25c. per share.

PROF. J. E. CLAYTON, one of the most eminent Geologists and Mining Engineers in this country, recently made a thorough examination of this property, and in his report to the Securities Committee of the New York Mining Stock Exchange on the 10th of July says: "*In this mine is a large supply of gold-bearing quartz equal in richness per ton to the world-renowned 'Black Hills,' or the average value per ton of the gold quartz mines of California and Australia. There is* $60,000, *net, of free-milling ore in sight.*"

DR. HERMAN CREDNER, now Professor in the Royal Saxon Geological School at Leipzig, Germany, and one of the most eminent authorities extant, in a report upon this mine, made in 1865, and after over $190,000 had been extracted therefrom by the imperfect appliances of those days, says: "*I predict for this mine a great success under skillful and economical management.*"

DR. R. W. RAYMOND, U. S. Commissioner of Mining Statistics for eight years, indorses Dr. Credner very highly, and in referring to the above report, recently, says *that "he was perfectly competent and perfectly honest, and his estimates of cost and profits are undoubtedly careful and conscientious."* Dr. Raymond further observes in his remarks upon the report of Dr. Credner, above referred to: "*When the mining industry of Virginia shall have been reorganized on a more rational plan, we believe it will enter upon a new era of growth and prosperity.*"

Subscription books were opened on July 30th for 50,000 shares of the above stock, the proceeds to be devoted to the erection of a first-class stamp-mill; 25,000 shares have thus far been taken. Applications for the remainder of the first allotment and for prospectus, etc., may be made to

JOHN A. MACPHERSON, Secretary.

DIVIDENDS.

LITTLE PITTSBURG CONSOLIDATED MINING COMPANY, 113 and 115 Broadway.

NEW YORK, July 17, 1879.

DIVIDEND NO. 3.

The Board of Directors has this day declared a dividend of $100,000 (one hundred thousand dollars), being fifty cents per share (par value $100) on the capital stock of the company out of the net earnings for the month of July, 1879, payable at the office of the company on and after August 7th.

Transfer books will close July 30th, and reopen on the 11th of August. GEO. C. LYMAN, Secretary.

W. H. ASHTON. P. DOYLE.

ASHTON & DOYLE,

Dealers in Gold and Silver Mines and Valuable

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W. W. HANLY & CO., BANKERS AND BROKERS, 60 Broadway, New York,
Buy and sell mining stocks on commission on New York Mining Stock Exchange, and offer superior facilities on San Francisco Exchanges through agency of the Bank of California.

B. B. MINOR. J. M. HARPER.
MINOR & HARPER,
DEALERS AND BROKERS IN
MINING SHARES AND MINING PROPERTIES
Special attention given to the Stocks of the BODIE AND BLACK HILLS DISTRICTS.
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of all kinds, we are prepared to guarantee satisfaction to those who may intrust their business to us.
We will make special arrangements with BANKERS and others dealing in GOLD DUST or in GOLD OR SILVER BARS, and will pay over to their correspondents here, as we may be directed, advances on Bullion when received or when the proceeds are ascertained.
We refer to:
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Address BAXTER & CO., Bankers, 17 Wall St., N. Y.

THE CALIFORNIA G. M. CO., of Bodie Dis., which is offering 20,000 shares at $1.25 per share, is located on the same mineral belt as the Bodie, Standard, Mono, Bulwer, Con. Pacific, Maryland Con., and adjoining the Spaulding. The main shaft is now down 150 feet on a ledge of ore four and a half feet wide, with increasing richness and width as depth is attained. Col. A. C. Dunn, the President of the Maryland Consolidated, is the resident director at Bodie of the "California."

The price at which these 20,000 shares are offered is very low. It is a tempting venture, and one, we believe, that will yield a very large return, not only in the increased value of the stock, but in the future product of the mine.

Subscriptions to this stock will be received at the Banking Department of the "Mining Record," or J. H. H. Williams, 61 Broadway, and the books will soon be closed, as the stock is being rapidly subscribed for.

THE LUCERNE MINING COMPANY.
Organized under the Laws of the State of New York.

TRUSTEES:
JOHN ALBERTUS, Books, 62 Duane street, New York, President.
EDWARD LAMBERT, Equitable Life Insurance Co., New York.
JAMES H. LANGFORD, 161 Broadway, New York.
CHARLES F. HEYWOOD, M.D., 150 West Fourteenth street, New York.
CHARLES F. ROPER, Publisher, New York City, Treasurer.
CAPITAL STOCK, 500,000 SHARES, OF THE PAR VALUE OF $10 EACH, UNASSESSABLE.

The Mining Properties of this Company

consist of three parcels, two of which are situated in Gilpin County, and one in Clear Creek County, in the State of Colorado, aggregating 4200 linear feet of veins, the principal shaft having already, at a depth of 100 feet, struck a streak of ore worth $60 to the ton.

Mr. Bradford H. Locke, the well-known Mining Engineer, of Central City, reports upon the mine which adjoins Lucerne (No. 1) on the east as follows: "The shaft is down about 100 feet, and is situated 650 feet east of the Lucerne mine, and 500 feet east of the east line of that mine. Ore has been taken out in sinking only, no drifting having been done. Rich ore was found in pockets above the bottom of the shaft, some of it assaying as high as 800 ounces of silver to the ton; but the engineer considers that the continuous body of ore has just been reached, and that it will go on improving in width as well as richness. It is the universal opinion that this mine will earn money from the present point. All the indications in the two shafts are, that the vein is continuous, strong, and rich, being a true fissure. At only $40 per ton, the yield would be remunerative; and I am confident that the ore will soon produce and run regularly at the rate of $150 to $200 per ton."

THE LUCERNE MINING COMPANY OWES NO DEBTS; HAS SUFFICIENT FUNDS IN HAND FOR SEVERAL MONTHS' WORK; AND, IN ADDITION, OWNS FIFTY THOUSAND SHARES OF ITS OWN STOCK.

Registrars: Union Trust Company of New York, corner of Broadway and Rector street.
Transfer Office: No. 60 Broadway.
This Stock is enlisted on the New York Mining Stock Exchange.

GEORGE W. MAYNARD, MINING AND METALLURGICAL EXPERT, late Professor of Mining and Metallurgy in the Rensselaer Polytechnic Institute, offers his services for the examination of metalliferous mining properties and metallurgical processes. Mr. Maynard has had an extensive experience in Colorado and Europe. Address 24 Cliff Street, New York.

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Belting and Rubber:
New York Belting and Packing Co., N. Y. ii
Gutta Percha & Rubber Mfg. Co., N. Y. ii

Blasting Powder:
Laflin & Rand Powder Co., New York iii
Miners' Supply Co., St. Clair, Pa. iii
Willard, J. W., Cleveland, O. vi

Blowers:
Wilbraham Bros., Philadelphia, Pa. xii
Worthington, H. R., New York iii

Boilers, Boiler Tubes, and Steam and Water Pipes:
Worthington, H. R., New York iii

Books and Periodicals:
American Journal of Science and Art ix
Brick, Pottery, and Glass Journal, N. Y. —
Capital and Labour, London, Eng. ix
Colliery Guardian, London, Eng. ix
Denver Tribune, Denver, Colo. ix
Engineering, London, Eng. ix
Gold and Silver Mines of America, N. Y. ix
La Houille, Paris, France iii
Miners Journal, Pottsville, Pa. ix
Teknisk tidskrift, Stockholm, Sweden. iii

Chemicals:
Elmore & Richards, New York vi

Clay Mines:
Ernst, Otto, South Amboy, N. J. ii

Coal:
Berwind, White & Co., New York xi
Borda, Eugene (Koh-i-noor Coal), Phila. xi
Borden & Lovell, New York xi
Consolidation Coal Co., Baltimore, Md. xi
Coxe Bros. & Co., New York xi
Hoboken Coal Co., Hoboken, N. J. xi
Maryland Coal Co., New York xi
New Central Coal Co., New York xi
Philadelphia & Reading Coal and Iron Co. xi
Swords, A. S., New York xi
Wells, Joseph R., New York xi

Copper Dealers:
Baltimore Copper Co., Baltimore, Md. v

Crushers, Ore:
Blake Crusher Co., New Haven, Conn. vi
Copeland & Bacon, New York iv
Copeland, E. T., New York vi
Gates & Scoville Iron Works, Chicago, Ill. ii

Dividends:
All on page vii

Emery Wheels:
New York Belting and Packing Co., N. Y. ii

Engineers and Chemists:
Beckett & McDowell, New York v
Bradt, W. H., Leadville, Colo. ix
Church, John A., Columbus, O. ix
De Lamotte & Marchand, New York ix
Daggett, Ellsworth ix
Hooker, W. A., New York ix
Hunt, Dr. T. Sterry, Montreal, Canada ix
Keyes, W. S., San Francisco, Cal. ix
Lowe, Francis A., Silver Islet, Ontario ix
Maynard, Geo. W., New York ix
Porter, J. A. Eureka, Nev. ix
Randolph, John C., New York ix
Rolker, Chas. M., Reno, Nev. ix
Rothwell, Richard P., New York ix
Stwolinski, F. de, Joplin ix
Wulsten, Carl, Rosita, Col. ix
Wilson Bros. & Co., Philadelphia ix

Engineers' Instruments:
Gurley, W. & L. E., Troy, N. Y. iv
Heller & Brightly, Philadelphia v
Keuffel & Esser, New York iii

Financial:
All on vii and viii

Fire Brick:
Ernst, Otto, South Amboy, N. J. ii
Evans & Howard, St. Louis, Mo x
Lacede Fire-Brick Manufacturing Co., St. Louis Mo. i

Food:
Blanchard Food Cure Co., New York ix

Hoisting Machinery:
Beckett & McDowell, New York v
Copeland & Bacon, New York xii
Crane Brothers Man'f'g Co., Chicago, Ill. xii
Griffith & Wedge, Zanesville, O. iii

Locomotives:
Manchester Locomotive Works, Manchester N. H. v
Philadelphia & Reading Railroad Co., Philadelphia, Pa. vi

Metal Brokers:
White, Edward P., New York ii

Mining Companies:
Alpine Silver Mining Co. vi
Cheyenne Gold Mining Co., New York vi
Horn-Silver Mining Co., New York xii
Lucerne Mining Co viii
Massachusetts and New Mexico Mining Co., Boston, Mass. i

Mining, Milling, and Smelting Machinery:
Aitchison, R., & Co., Chicago, Ill. iv
Beckitt & McDowell, New York v
Blake's Stone Breaker, New Haven, Conn. vi
Copeland & Bacon, New York xii
Crane Bros. Mfg. Co., Chicago, Ill. xii
Forster-Firmin Gold and Silver Amalgamating Co., Norristown, Pa. iii
Fraser, Chalmers & Co., Chicago, Ill. iv
Gates & Scoville ii
Griffith & Wedge, Zanesville, O. iii
Morey & Sperry, New York v

Perforated Sheet Metals:
Aitchison, R. & Co., Chicago iv
Felber, George, St. Louis, Mo vi

Patents:
Lehman, F.A., Washington, D. C. iii

Photography:
Rockwood, George G., New York i

Pumps:
Cameron, A. S., New York iii
Clayton Steam Pump Works, Brooklyn, N. Y. i
Crane Brothers Manufac'g Co., Chicago iii
Deane Steam Pump Works, New York iii
Knowles Steam Pump Works, New York. i
Worthington, H. R., New York iii

Railroads and Transportation:
Colorado Central R.R. ix
Pennsylvania R.R. x

Rock Drills:
Am. Diamond Rock Boring Co., N. Y. xii
Burleigh Rock Drill Co., Fitchburg, Mass xii
Bryer Rock Drill, Boston xii
Ingersoll Rock Drill Co., New York. xii
Johnson Rock Drill Manufacturing Co., Boston, Mass. xii
National Drill & Compressor Co., New York xii
Penn. Diamond Drill Co., Pottsville, Pa. xii
Rand Drill Co., New York xii
Sampson, Geo. H., Boston, Mass xii

Roofing:
Eureka Iron Roofing Co., Cincinnati, O. —
Hyndman, W. G., & Co., Cincinnati, O. —
Keely, O. S., & Son, Indianapolis, Ind. i
Northrop, H., Co., Pittsburg, Pa. i
Porter Iron-Roofing Co., Cincinnati, Ohio. iii
Scaife, Wm. B., & Sons, Pittsburg, Pa. iv

Rope and Blocks
Gilbert, Hubbard & Co., Chicago, Ill. ii

Safes and Scales:
Marvin Safe & Scale Co., New York ix

Saws:
Curtis & Co., St. Louis, Mo ii

Smelting and Refining Works:
Forster-Firmin Gold and Silver Amalgamating Co., Norristown, Pa. iii
Stetefeldt Furnace Co., San Francisco, Cal. xii

Special Notices:
All on page vi

Steam Fire-Engines:
Manchester Locomotive Works, Manchester, N. H. v

Steeline:
Bauer & Co., New York xi

Steel Works:
Crescent Steel Works, Pittsburg, Pa. ii
Park, Bro., & Co., Pittsburg, Pa. ii
Sanderson Brothers Steel Co., Syracuse, N. Y. ii

Tackle Blocks:
Bagnall & Loud, Boston, Mass. xii

Tramway:
American Wire-Rope Tramway Co., Phila. v

Valves:
Mohawk & Hudson Manufacturing Co., Waterford, N. Y. iii

Watchman's Time Detector:
Buerk, J. E. Boston, Mass ii

Wire Rope:
Copeland & Bacon, New York xii
Haigh, J. Lloyd, New York i
Hazard Mfg. Co., Wilkes-Barre, Pa. v
Hubbard, Gilbert & Co., Chicago ii
Mason, John W. & Co., New York i
Roebling's, J. A., Sons Co., Trenton, N. J. i